



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

### Usage guidelines

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

### About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>













X-

# THE BUILDING OF A SHOE

A SERIES OF PRACTICAL CHAPTERS  
PREPARED BY WELL-KNOWN AUTHORITIES  
IN THE SEVERAL DEPARTMENTS OF  
SHOE MANUFACTURING AND SELLING

COMPILED BY  
FRED HAMMOND NICHOLS



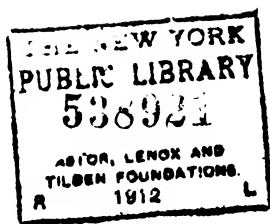
1912

*The Nichols Press*

THOS. P. NICHOLS & SON CO., PUBLISHERS  
LYNN, MASS.

WILLIAM WESLEY & SON  
LONDON, ENGLAND





COPYRIGHT, 1912, BY  
FRED H. NICHOLS, LYNN, MASS.

COPYRIGHT, 1912  
REGISTERED AT STATIONERS HALL  
LONDON, ENGLAND

COPYRIGHT, 1912  
AU DEPOT LEGAL, AU MINISTRE DE L'INTERIEUR  
PARIS, FRANCE

ALL RIGHTS RESERVED

ROY WIM  
JUN  
VAGEL

## INTRODUCTION

*The strong men of any day or generation are the builders whether of character, of homes or of the necessities of life.*

*It is from these oldest of handicraftsmen that all other builders have been taught a constructive system of work, the masonry of selection, solidifying, and even of adornment, from the laying of the corner-stone to the placing of an architrave. Each artisan and mechanic skilled in his calling is a builder, though a multitude of men, and of many trades, toil to the completion of the house.*

*Thus in the building of the shoe. The technique of its construction is fit to be placed among the wonders of this age, so universal a necessity to mankind has the shoe become, and so great a variety of builders has Progress summoned to its twentieth-century completion.*

*A leading product of the skilled workmanship of our times, the shoe is a masterpiece of ingenuity, its finest example being the result of a long series of human invention and discovery, even from the far-off days of the "dull swain of the clouted shoon."*

*Who builds the shoe? What is the process of its construction — what the essentials of its making and its marketing?*

*Such queries are answered as fully as the limits of this volume will allow, by means of information given by master builders of the shoe, and those who have spent a lifetime in directing the many processes of shoe-making.*

*The Compiler*

# CONTENTS

	PAGE
I EVOLUTION OF FOOTWEAR . . . . .	1
II LAST-MAKING . . . . .	4
III PATTERN-MAKING . . . . .	9
IV SOLE LEATHER . . . . .	15
V UPPER LEATHER . . . . .	23
VI FINDINGS — LININGS . . . . .	27
VII FINDINGS — METALLIC . . . . .	37
VIII INKS, STAINS, WAXES, ETC. . . . .	40
IX THE TAG AND ITS USES . . . . .	43
X THE OFFICE . . . . .	49
XI THROUGH THE SHOE FACTORY . . . . .	52
XII SHOE MACHINERY . . . . .	57
XIII PACKING . . . . .	68
XIV SHIPPING . . . . .	70
XV SELLING THE SHOE . . . . .	72
XVI SHOE SAMPLES . . . . .	77
XVII SHOE ADVERTISING . . . . .	81
XVIII SHOE TRADE JOURNALS . . . . .	86
XIX MERCHANDISING THE SHOE . . . . .	94
XX EXPORTING THE SHOE . . . . .	99
XXI THE RETAILER . . . . .	102
XXII THE WEARER . . . . .	106
XXIII WOMEN'S FINE SHOES . . . . .	109
XXIV SHOES FOR MEN . . . . .	113
XXV BABIES' SHOES . . . . .	117
XXVI THE COMFORT SHOE . . . . .	122
XXVII RUBBER SHOE MAKING . . . . .	125
XXVIII FACTORY SANITATION . . . . .	131
XXIX RECREATION OF OPERATIVES . . . . .	138
XXX FINDING THE COST . . . . .	142

## I

### EVOLUTION OF FOOTWEAR.

F. W. H.

---

**T**HAN the shoe, there exists no more remarkable example of the evolutionary changes that civilization and education have shared in the upward trend of mankind. A specialist, too, can readily discern the milestones of the many different ages of history through the ever-varying types of footwear as they are pictured before him, from the sandal to the shoe.

It was something of the sandal-style, it is likely, that set the first of the nomads and barbarians thinking; an elegant type of the sandal led the styles of the earlier civilization of Egypt and Assyria; and it was among the cherished personal adornments of the Hebrews and contemporary nations.

The aboriginals of our own America were not all barefoot, as it is pointed out by archæological savants that there was worn a foot-covering not unlike the mocasin of the Red Men who, having exterminated their predecessors, are in turn becoming exterminated.

Wild men of Angleland are said to have worn a mere covering for the bottom of the foot, called the sole shoe. The stranger within their gates, the Saxon, improved upon that with the shoe-sandal, the soles being of wood, and the upper parts of red leather, laced with thongs.

## THE BUILDING OF A SHOE

Rich and poor, that is, whosoever wore footgear, had the same sort of shoe to wear. The bold and conquering Normans wore a footcovering that was simple and unshowy, a short boot, to which the name *curta ocrea* was given. And then the Romans brought to England what they already had in Rome—shoes of all sorts and of many names, for everybody, for all callings and occasions, thus: the *solea*, the sole shoe or sandal, the *crepida*, or slipper, the *pero* or foot and ankle covering, the *soccus*, that not only covered the foot but a part of the leg—these all for the lower classes; then, too, there was the *caliga* for the soldiers; the *cothurnus* for horsemen, hunters, tragedians; etc.

In England, the pranks that fashion has played as to footwear are too numerous and superficial to make a critical mention of here. Wonderful have been the types. The turned-up toes of the Plantagenet period, when the shoe-toes were attached to the knees of the knights by means of clanking chains; the square and ample-toed shoes of the reign of Henry VII; the conspicuous ribbon lacing of the Tudor shoes; the wide-topped Spanish boot, made of Cordova leather and edged with lace, that vaunted itself in the court of Elizabeth; the open-topped and lace-crowned boot of the Stuart period; the austere and quiet foot apparel of the Protectorate; the showy red-heeled shoe of King William III; the plain shoe with the enormous buckle when George I was king—and when women's satin shoes were popular; the low shoes that prevailed during the 18th century; the bluchers of the French Revolution; the Hessian top

## EVOLUTION OF FOOTWEAR

boot called the Wellington, in style in 1790;—all these are very suggestive and very true waymarks of history, that not only point out the progress of Dame Fashion, but that direct the way of the greater conquerors and events in the history of peoples.

With the beginning of the last century, there entered the present era (with but little variation) of the modest and adaptable shoe, and we are indeed living in a period of simplicity, ease and good style so far as footwear is concerned. Never in the world's history has mankind paid such scientific attention to the manufacturing of the shoe, in the minutest details of the making thereof, to the end that the ostentation and display of yesterday give way to a footcovering that, modeled to the human foot itself, discovers its highest qualities in durability and neatness.

## II

### LAST-MAKING.

DANIEL W. GOODWIN.

---

**T**HE indispensable and accommodating last. Indispensable almost from the beginning of the manufacture of leather shoes, and accommodating with every change and whim of style or fashion.

In making the shoe, the last comes first, and the shoemaker knows it is as essential to that purpose as are the beams and plates and rafters to any building — though unlike the latter, when the last has given the shoe its shape, the support is removed. Modeled from the human foot, the last secures for the shoe the required formation of it, in every detail; and the well-made and the up-to-date shoe is, or should be, everything that the last demands.

From an ordinary rough block of wood is evolved the article known as the last, that for the purposes of modern shoemaking has become nothing less than a work of art — a sculptured model. It starts out upon its career of usefulness in our forests, where gangs of choppers and sawyers are regularly employed hewing the blocks. These plain, oblong sticks of wood, a little larger than a large-sized shoe, are most frequently rough-turned, but sometimes this is not done. In the woods of Michigan

## LAST-MAKING

and New York states, the blocks are "rough-turned" by simple machines made for that work, which give ten or twelve turns to the wood; but there are many concerns in Maine that simply chop the blocks roughly.

Before the blocks can be utilized, or placed in the machine, they must undergo for a space of six or seven weeks the process of kiln-drying, in order to prevent the lasts from shrinking.

The time was, of course, when lasts, like everything else in the shoe manufacturing business, were made by hand; but the demands for world-wide supply, and the fastidiousness of fashion called for the invention of the last-making machine, about the year 1820.

Concerning this machine, the last-lathe, as it is called, the principle of its assembly and working is practically the same as when it was first manufactured. Its chief features are what is known as the cutter and the model ends. A completed and true model for the last that is to be manufactured is clamped in the model end of the lathe. The rough block heretofore mentioned is then set in its clamps at the cutter end of the machine. The latter then being set in motion, the model swings against its model wheel, and the last block against the cutter wheel. The latter, forced solidly against and upon the rough block, follows minutely every indication of the connecting model wheel, starting at the toe-end and proceeding towards the heel, following and producing with exactness each curve and hollow. The last is thus turned out in two minutes, and the lasting machine now produces about fifty pairs a day. On account of the hollow sides of the rights and



## THE BUILDING OF A SHOE

lefts, it takes a somewhat longer time to turn a last than was the case a few years ago.

In the manufacture of lasts for women's shoes, a standard known as women's model No. 4 is placed on the model end of the machine, and the grades are made in five sizes each way. As a general thing, a men's model No. 8 goes on the machine, and five sizes are graded each way, also, if required. Usually, three models are made use of for a child's shoe last.

When the last, thus turned and made like its model, is taken from the machine, two rough unfinished pieces protrude at toe and heel. These are then attached to a very important machine, the polishing wheel, when the last receives its final touches, and is taken off smooth as glass, after which the rough projections are removed by a shaving machine.

One may say, with pretty strict adherence to actual conditions, that lasts go out of fashion every morning. Something new in shoes is in demand every little while, as fashion changes or custom calls for an innovation.

Up to about thirty years ago, there were neither rights nor lefts in shoe work for women, and so women's lasts were made straight. As no block was used with the last, as at present, an instep leather was tacked on, to produce the fulness and curve on top, the same leather being put in a No. 7 as in a No. 2, for example. It was about the year 1845 that John Kimball of Boston invented a last that was straight on top, but with a dove-tailed groove there. Then he made a separate block, with a tongue attachment that, when placed on the last, gave the shoe its



## LAST-MAKING

proper fulness on top. Yet that sort of last has not been in existence for fully thirty years, nearly all women's and men's lasts at the present time being made from the sawed block, a simple lock device holding the pieces together.

Other lasts occasionally used are: the Arnold hinged last, a V-shaped piece being sawed from the top (the last being sawed in two, straight through the V) and a hinge being set in, lengthwise,—its purpose being to lift the heel and thus pull out the last without fear of injuring the shank. The Krentler hinged last has a V-shaped cut on top, also, but a semi-circular cut from the centre of the sole to the bottom of the V. Very many lasts are made similar to these. A very efficient one is cut through from top to bottom, and two levers on each side admit its sliding up and down. This shortens the last about three-fourths of an inch. Iron lasts are made in England almost entirely. Lasts are made not only for the ordinary shoe, but for slippers, boots, gymnasium shoes, and so on to the end; the manufacturer making it his business to follow every requirement of the subtle changes in fashion. He must know how to add to or subtract from the model in order to produce a wider or narrower last. To ensure a fuller or broader or narrower toe, he must know where to tack on a piece of leather that shall widen or taper the model to suit the taste; for the higher heel, he must be exact in his elimination of the bottom of the sole, and his proportions of paste of glue and sawdust in filling out hollows.

For a welt shoe, a heel iron is affixed to the last to facilitate nailing the heel; and for a McKay-made shoe,

## THE BUILDING OF A SHOE

the bottom of the last is ironed with sheet-iron, the latter assuring the clinching of the lasting tacks.

A very exact eye was necessarily possessed by the old-time shoemakers for their work, as they rounded the sole on to the last by guess. In the days when lasts were made by hand, the "size-stick," so-called, was in vogue for securing widths and lengths; but it is of interest to recall the fact that the last-making machine itself, when it was first made, did not grade the sizes; the length and width grading arrangements have since been attached.

### III

## PATTERN-MAKING

ELMER E. SANBORN

---

**J**UST as all the world goes to Worth and Paquin for styles of clothing, so everybody turns to the pattern designer for his product which, when put over a properly designed last, forms the fashionable foot-covering.

In this particular art, for pattern-making is an art, the old saying is retroactive — “The first shall be last, and the last first.”

To properly design a pattern, the last is taken as the basis; and after due consideration of the shape and style and use to which it is to be put, the designer makes such a pattern as will conform to the above proposition, as suggested by the last. There is the strictest sort of utility in the designing of lasts to patterns, as they are always designed for just the particular use to which they are to be put. For example, the slipper, the boot, the gymnasium shoe, each has its last, and so on, to the end, of all the kinds of shoes used.

Now given the last, and knowing the kind of shoe that is to be put upon it, the designer makes a covering (or a fitting as he calls it) which, when reproduced in leather, stitched together and properly lined, becomes a shoe. Patterns are made in countless number as regards design — there being absolutely no limit to the number, as new

## THE BUILDING OF A SHOE

ones are being made practically all the time. About 25,000 designs are memorized by the ordinary designer.

Patterns, of course, have to be constructed with regard to the material to be used — patterns for leather differing from patterns for cloth or other textures. The number of patterns in the ordinary shoe varies with the design. For example, in the button boot there are the following: two quarters, two linings, button-piece, button-piece lining, top-stay, vamp, foxing, tip, back-stay, vamp-lining, button-stay, backer for button-holes, and a marker to mark the button-holes in the button-piece. Other shoes have either a greater or a less number of parts.

To begin at the beginning of the work of the pattern-maker, the first pattern cut by the designer is in paper. This paper design is then sent to the shoe manufacturer, and from it a pair of shoes is cut, stitched and lasted. Usually, one of the shoes is completed; and the other is left with the sole off, for the purpose of showing the designer the amount of leather that is drawn over the edge of the inner sole, so that he can see whether the upper fits properly or not — a certain amount being necessary in the seaming of a welt and turn, and a different allowance for the McKay, the method of lasting, itself, varying in the different kinds of shoe construction. The McKay shoe is lasted with the tacks inside the seam, and left in the shoe after the latter is finished; in the welt, the tacks are outside the seam, and are removed before the shoe is sold. This necessitates varying the amounts of leather to be used under the sole.

## PATTERN-MAKING

The finished shoe, being used as a basis of style, in well regulated factories is tried onto the model foot. It is from this trial that the patterns are either accepted or rejected. This trial shoe, when it is perfected, becomes a sample, and being taken and shown to the trade, the shoes are ordered therewith. If sufficient orders are placed on this particular shoe, patterns are then called for from the pattern manufacturers. Then the paper pattern becomes the basis for the final pattern. Usually, more than one width is ordered, the trial being one of the smaller widths, generally a 4B in women's shoes. From this 4B — A's, B's, C's, D's or other widths are made in paper, by a system of graduated allowances which are in conformity to the systems used by last-makers in securing their widths of lasts.

The model widths being made in paper, they are reproduced in thin iron to an exact degree. These iron models, which are in the shape of the parts of the shoe above enumerated, are clamped to the bed of a machine called a grading machine, which is an adapted pantagraph — the principle of the machine being governed by longer or shorter levers, one part made to move faster or slower than another part, one part moving around the clamped-on model. By lengthening or shortening the levers mentioned, by a suitable cutting device, sizes are graded or cut from a hard tar-board, or junk-board, which is held in position by suitable clamps. These grading machines are of several kinds, and perform their work in a truly marvelous manner.

## THE BUILDING OF A SHOE

The difference in length, over all, in a pattern, is one-third of an inch, and the machines are so designed that, should the pattern be constructed of a dozen parts, with these dozen parts stitched together, they would be only one-third of an inch longer or shorter than the model for each size.

These sizes, running in women's work generally from No. 1 to No. 8, are arranged in bunches, and the edges are smoothed by files and sandpaper. They are then bound by strips of metal — the metal being so formed that it fits the edges of the junk-board. Where a corner occurs, a machine made for the purpose cuts out a mitre so that the corner may be turned. For this edge, allowances are made in the size of the pattern, automatically, by the grading machine. When the ends of this edge or binding come together, they are suitably finished by soldering. The patterns are then stamped as to sizes, widths, numbers, styles, etc.

A departure is the use of colored boards to designate widths — A white, B blue, C red, D green, E orange. This system is in vogue, also, in the striping or coloring of lasts. And even the tag has a dash of color in conformity with the same. This allows the cutting-room foreman to know just where different widths of patterns are being used in the room, and thus mistakes are prevented. This feature has proven a great success.

The designing of patterns also extends to ornamentation, by perforating, marking or burning, and to the selection of the combination of materials.

## PATTERN-MAKING

Pattern-making has advanced from a very crude beginning to an art, which rivals the electric business in exactness and detail. In early days, patterns were first made of paper, and there was no method of grading, each pattern being made separate. The first innovation for grading was the making (by eye measurement) of a large and a small pattern, and cutting both out of strawboard, using blocks of the same material to make a sufficient number of sizes between these completed patterns; then pinning them together by screws or nails. Using the large and the small patterns as a guide, and the carpenter's draw-knife as the instrument, the block was cut between them, the resulting bevel being subsequently skived off. Later, sizes were graded by a system called proportional dividers — an instrument provided with a sliding fulcrum with a movable centre, and with points on both ends, the relation of the spread of one end to the other being determined by the location of the centre.

By placing this movable centre so that the long ends equaled the length of the entire pattern, and the small ends were one inch apart, by pricking on lines radiating from any given point, a distance of three sizes could be estimated, which could be divided into three equal parts, each representing a size; and by using the pattern, lines could be drawn from one mark to another, and, being cut out with a knife, could be marked on board.

It was the custom, of old, to make patterns ahead in dull times. With the old rocker last, which had a wedge to take up the variations of such pattern-making, shoes could be made. To-day, patterns are made for every



## THE BUILDING OF A SHOE

sort of last. From patterns, also, are made the clicking dies, and no die can be made without the pattern.

Only the shoe manufacturer is aware how truly his success is found in style, economy of stock, fit, or the cutting quality of his patterns. This is the watchword of the scientific pattern-maker, who, by the way, must be a shoemaker, having a working knowledge of all the departments of shoe-manufacturing.

## IV

### SOLE LEATHER.

ALBERT ROWE MERRILL.

---

ONE of the most substantial features in the building of the shoe is the sole.

During the past few years, the tanning industry has been revolutionized. Formerly, the tanning establishments were located near the bark supply; but as civilization has advanced, the timber has been cut off, thus causing the tanneries to be driven back farther into the country — and at last, because of excessive freight rates, tanners have been obliged largely to dispense with the use of bark in the tanning of sole leather.

But with the advent of the use of what is known as extracts, the earth has been diligently explored for any vegetable matter that contains tannic acid, or any tanning properties. Today, 90 per cent. of leather is tanned with so-called “extracts,” and this country is now making the best sole leather in the world.

Considerable misapprehension exists respecting the use and value of extracts in the tanning of sole leather. As a matter of history, the English taught us the use of extracts, notwithstanding their boasted position of making the best sole leather. But the latter is a fallacy — this country could and would make as good or better leather than any in the world if the demand existed.

## THE BUILDING OF A SHOE

There exist still a few yards in this country that make the old bark tan leather; but science and experience have taught tanners the proper use of "extracts," and today our best leather is being made from these.

The extract plants are generally situated back in the mountains, near the supply of wood and bark. For certain kinds of extracts the trees are felled, and the wood and bark macerated into a pulp and reduced into the consistency of molasses by evaporations. It is then shipped to the tanneries in barrels and tank cars, there to be used.

By the way, some of the most modern of the tanneries are situated within easy distances of the largest cities; and a feature of their evolution in the future in all probability will be the establishment of tanneries near the hides supplies, rather than the bark supply.

This thought now brings us to a consideration of the different kinds of sole leather used for soles and insoles. There is the scoured oak — the highest grade of sole leather, manufactured from the oak bark with small percentages of oak extracts. Then comes the extract oak, and the so-called union, which is tanned with a larger percentage of extracts and quebracho. Today, there exists no such thing as union sole leather (as formerly known); then the hides were tanned into sole leather by the use of about ten tons of hemlock bark to one ton of oak bark, or about that ratio. Such a combination of barks gave rise to the name "union," as applied to sole leather, to distinguish it from the straight hemlock and oak.

## SOLE LEATHER

Other leathers are manufactured and used to a small extent, particularly in specialties that do not form a large percentage of the manufacture of shoes: for example, the hand-stuffed, buffed grain sole leather specially scoured for use in the manufacture of the very high grade of turn shoes, in which the leather is plumped up excessively, and filled with properties to make it more flexible for shoes now so much in vogue.

Then there is a line of chrome leather, which is a mineral-tanned leather, in which the hide is not plumped as in the vegetable-tanned process. This variety is largely used in the manufacture of gymnasium shoes, and has the best wearing qualities of any sole leather manufactured. Though its cost is extremely high, it likewise possesses extreme flexibility, wear, and water-resisting qualities, that make it valuable for high-grade specialty purposes, and where cost is not the first consideration.

Then follow the hemlock-acid and non-acid tannages, which give us the largest varieties of sole leather made, and in which also the largest varieties of hides are used. This leather is largely inferior in quality, and is used only in medium and cheap-priced shoes, where solidity and extreme conditions are desired.

The search for hides is literally world-wide, and they are first valued in accordance with the way in which they are removed and cured. The highest order of experience and skill are requisite to remove the hides from the cattle, the best hides being obtained from the large packing firms, which give due attention to this branch of the business.

## THE BUILDING OF A SHOE

The next variety of hides is obtained from the smaller packing houses, and the poorest are called "countries." These are taken off by the small country butcher who has two, six or a dozen hides, which are more or less cut and scored, and make imperfect leather when tanned.

In foreign hides, those from warm countries are generally cured in the sun, and are known as dry hides. This class of hides goes into the cheaper forms of hemlock leather, acid and non-acid tanned, and forms the cheapest kind of sole leather manufactured.

With this brief handling of an extremely interesting and valuable subject full of technical processes, we now come to the sole and insole in question, and consider the demands especially for the ordinary women's or men's shoe, retailing at \$4 and \$5 respectively.

The cut-sole industry is one of comparatively modern introduction, and the huge successes made by shoe manufacturers have been obtained only through the assistance of merchants who specialize in the several articles of trade — soles, insoles, counters, stiffenings, taps, heels, box-toes, top-pieces and rands. All these articles are now made in highly specialized factories doing a tremendous business, which enables the shoe manufacturer to get just what he wishes at the lowest cost, one pair or one million pairs, in exact size, grade and quality at a known fixed cost. Thus he gives attention to the more technical part of shoemaking. These dealers who specialize through intense competition have been able to improve their products, and lower their cost to the shoe manufacturer, who can give such bene-

## SOLE LEATHER

fits to the consumer, that could happen in no other way; this, too, is an advantage that exists in no other part of the world. It would be physically impossible for many large manufacturers of specialty women's shoes to do their enormous business, were it not for their ability to buy these same products from the specialist.

There are no cut-sole, counter, heel, rand and top-piece manufacturers in the world outside of the United States. Of the cut-sole houses, there are 40 in the United States, who do a \$40,000,000 annual volume of business in soles, cutting thousands of sides of leather each day — the average among large cutters being 1,500 sides per day, or the hides from 750 cattle. One can readily imagine the great amount of cattle it would require to run the average factory for only one week.

The cut-sole manufacturer takes the best part of the back, which is the tanned hide, split up the back, each hide or side making two backs of leather. The counter man takes the better part of the bellies; the heel, top-piece and box-toe manufacturers use the lighter, cheaper and poorer portions, as the case may be, and as it is adaptable for the specific purposes required; and the rand manufacturer certain portions of the shoulder.

Nothing is wasted in leather. Cuttings from the establishment of the sole manufacturer, when too small to put into anything required in shoe manufacturing, go to another specialist who sorts them over for washers of different sizes, button-pieces, backs, etc., and to the manufacturer of buttons and hundreds of other places of

## THE BUILDING OF A SHOE

this sort; and then the dirt and clippings are ground up for leather board, or are sent to chemical manufacturers, to be burned for the chemicals to be obtained therefrom. The smaller pieces (considered as waste by many) more than pay for the rent and power costs of the cut-sole manufacturer.

After the leather is received, it is stripped the width of the back in accordance with the length of the soles desired. The stripper or operative in this department selects the weights and qualities in accordance with the requirements; the strips then go to the cutters who cut them into soles, each again in accordance with the width required.

The modern cut-sole manufacturer supplies soles for the shoes for babes, infants, children, misses, boys, youths, women and men — all requiring different sizes and widths. In women's soles, many manufacturers cut and carry in stock three different widths of soles, to supply the demand, — a narrow pattern or width for turn shoes, medium for welt and McKay shoes, and wide for wide widths, welt and storm shoes and where extension edges are sought.

After the soles are cut, they go to the sorters, who select five different qualities; and in three of the qualities there are grades made for every half inch in from four to twelve-inch grades for every twenty pairs. In other words, about fifty grades of soles are made from each side of leather, in order to enable the shoe manufacturer to buy exactly what is required. The one who makes extra fine shoes buys nothing but an extra fine selection; for the medium

## SOLE LEATHER

grade a lower grade; while the man who makes the standard buys the cheapest grade.

Through this specialization, any manufacturer can buy just the grade he wants, to cover his particular needs, for from  $5\frac{1}{2}$  cents to 28 cents in women's, 10 cents to 50 cents in men's — a range that covers every demand.

In the past few years there has been placed on the market a machine for grading soles, insoles, taps and counters, for thickness — a machine that finds the lightest point of the product that goes through, locks itself automatically, and stamps the thickness in irons on the product, making thicknesses each  $\frac{1}{16}$  of an inch. This machine is proving of great value to many manufacturers, and enables the shoe manufacturer to use the exact iron he desires in his soles, insoles, taps and counters. It eliminates the waste of leather falling on the floor, in evening up — which is an economical loss, as some one is obliged to pay for this waste; and it enables the shoe manufacturer to select his welt closer, to get the desired thickness in edge and in many other directions.

The cutting of leather and its intelligent handling is a business of its own. Soles are cut rights and lefts; and a great deal of supervision and inspection is demanded in the separation of grades and sizes, and for the carrying of the necessary grades in stock, for the proper filling of orders. To merchandise properly this vast amount of leather in these forms in the different sizes, from baby's to man's, and to find the proper place and price for each product is a veritable revolution as compared with the method of a few years ago, when leather was taken in the



## THE BUILDING OF A SHOE

side, put into a tub, wet up and cut out by hand in a rude and crude manner in a block of sufficient width, later on to be trimmed up by hand on the shoe. It is easy to be seen how great the loss in time, and the waste in handling leather by the old method, as compared with the modern way.

The ordinary sole cutter runs in revolutions of 200 per minute, which represents the capacity of the machine. Compare this with the old-time method, to observe the wonderful stride that has been taken in this one department. The same great saving is made in all departments and in the different lines, in the handling of the various products of sole leather that go to the making of a shoe, and shows what wonderful values are to-day given in this direction. No article of food or dress is purchased by the consumer to-day that compares in any way with the shoe, when we consider the actual value given and the small profit accruing to the shoe manufacturer and the leather dealer.

## V

### UPPER LEATHER.

L. M. WINSLOW.

---

THAT portion of the shoe which is not a part of the sole or the heel is known by the general name of "the uppers," which not only serves as a covering for the top of the foot and the ankles, but adds grace and beauty to the foot. As a matter of course, more work, and a greater variety of it, is put into the uppers than into the bottoms and heels, and at the beginning here is where the best part of the skill of the pattern-maker is revealed.

The pieces of leather that are assembled into the uppers of the shoe are well known to every wearer by the common names of vamps, quarters, tips, tongues and stays. The formation and the adaptation of each of these pieces should be classed with the marvels of modern industry. To so high a state of perfection have they been brought, as stitched together in the uppers, that when the foot is fitted well into the shoe, they follow easily and naturally every movement of the foot and the ankle, while they conform to every fulness and hollow.

To produce these shapely pieces and this assemblage that holds the sole and the heel to the foot, the business of upper leather manufacture is one of the greatest and most diversified in the shoe trade. The ordinary wearer

## THE BUILDING OF A SHOE

of the shoe knows that upper leather differs from sole leather in material and use; but few are aware of the fact that many kinds of skins are utilized, and many kinds of upper leather firms are doing a world-wide business in which each has its own enviable reputation.

Within the space of three decades the upper leather manufacture has practically sprung into being and attained its present magnitude. Previous to about twenty five years ago, nearly all the shoes that were made for men and boys had their uppers of cowhide and calf leather; while nearly all the shoes manufactured for women, misses and children were of kid, with some percentage of sheepskin. To-day, ninety-five per cent. of all the leather that is used for uppers is obtained from the hides of cattle, calves and goats, and also from sheep and the Australian kangaroo.

But the leather that at the present time is the most popular in the manufacture of uppers, that is, for the American trade, is the calf skin, which sells at the highest price of all. Other countries, such as South America and Australia, make use of large quantities of kid leathers for the shoes produced there. There is hardly a country in the world that does not contribute to the general supply of upper leather. Russia produces the largest amount of calf skins, India the most goat skins, while a goodly share, also, of these skins comes from the United States, from South America and even from China. But taking into consideration all kinds of upper leather in use everywhere, America produces more than any other country, and Germany stands a close second in this respect.

## UPPER LEATHER

The largest tanning centre in the world is in Essex county, Massachusetts, which includes the extensive establishments at Peabody and Salem. Other notable headquarters for the tanning of kid and sheep leather are those at Philadelphia and at Wilmington, Delaware; while the largest centre in the west for the tanning of calf and hide is at Milwaukee, Wisconsin.

Thirty years ago or so, there existed no differentiation between the tannages of upper and sole leather. The easily accessible materials were the bark tannages everywhere used. Since that time, mineral, or so-called chrome tannages have almost wholly superseded the old-fashioned methods, and with a thoroughness and finish in the application in which the old style can bear no comparison. This new tannage has so improved all upper leathers, that it has been found possible to render soft, pliable and very durable uppers from the hides of cattle and from heavy calf skins. The tannage of all upper leathers is essentially the same whether in bark or chrome — the only difference being in the length of time that is allowed in the process of tanning. Stress should be laid upon the durability of upper leather, owing to the present-day tannages — it is very seldom that the uppers of shoes will not out-last the soles, or even two sets of soles. Chrome tanning appears to have given more strength and fibre to the leather, while it has rendered it more flexible, and it certainly has added much to the longevity and the comfort of the shoe.

When the shoe manufacturer is ready for his supply of upper leather, he purchases directly from the tanner.

## THE BUILDING OF A SHOE

Like sole leather, the upper has a wide range in value. Ordinarily, shoes are cut from leather that costs all the way from five cents to forty and fifty cents per foot. Some of the higher cost shoes are lined with kid leather.

The introduction of colored leather in the various shades of tan and brown was made in the shoe trade some twenty-five years ago, and since that time it has become a staple article. This coloring is now applied to all kinds of leather. During the past few years, that brilliant finish that we call "patent leather" has become stylish — a style that lingers and is popular and dressy. This finish is applied to all kinds of stock that is utilized for upper leather, principally to hides and goat skins. Kid and calf skins are finished in dull, medium and brighter styles — the vamp often being cut from the bright finish, and the top-pieces from the dull leather, which makes a pleasing combination. Aside from the upper leather proposition, fine shoes are often made with a leather vamp, and some kind of cloth top.

## VI

### FINDINGS — LININGS.

THOMAS R. NEATH.

---

**B**EFORE the days of improved machinery, the “shoe finder” was one who dealt in all sorts of shoemakers’ supplies, such as soles, linings, wax, thread, awls, cutting knives, pincers, tacks, wooden pegs, and many other accessories of the business.

With the gradual introduction of shoemaking machinery, and the consequent gradual changing over of shoemaking methods, the finding business readjusted itself to the new conditions. There existed a tendency to specialize, and to get nearer first hands. The more progressive houses ceased to be contented in doing business on the old “jobbing” basis, and the result has been that there exist to-day firms of sufficient magnitude to supply manufacturers at first cost, and lay at their doors the product of the best looms of the world. These firms no longer conduct a “shoe finding” business in the old and accepted sense of the term. The line of textiles they handle is large and varied, and the volume considerable. They are direct importers of worsted boot cloths, the better quality of which come from England. They handle slipper satins of both domestic and French manufacture, in a big variety of shades and qualities; they produce from season to season a large line of fancy fabrics or novelties, which are the product of the best designers.

## THE BUILDING OF A SHOE

These fabrics are put forth at the expense of much thought and many trials, backed by the best experience, for it is only in this way that a fabric can be made that is at once pleasing to look upon, and durable. The construction of these goods is most important, if consideration is to be given to the hard usage to which they are to be put. They are constructed with a double, and in many cases a triple warp with a hard throw, all of which adds to the expense of the production over the cost of a similar article of like design woven in the ordinary way for other purposes. They convert Sea Island as well as domestic ducks in a variety of qualities and widths for white canvas shoes, and the weights, qualities and kinds of cotton linings are innumerable.

Among the various kinds of cotton cloth which go into the construction of a shoe, may be mentioned drills, ducks, twills, satteens, flannels, sheeting, etc.

Take the matter of drills for example; there are eight or nine different weights or qualities. Each of these may be put into the bleached, and each into the brown finish, then the bleached may again be doubled up by carrying them all in both the dull and linen finish, and the brown doubled up by carrying them in the soft finish suitable for vamp linings, and in the half rough or starch-back suitable for linings, not to mention one or two of these weights that must be dyed into tan as well as into black. It will readily be seen that when this is carried down through the list, as mentioned, it sums up into a very grand total, and that large stocks in the converter's hands are unavoidable.

## FINDINGS — LININGS

All of this calls for the employment of large capital, and a constant watch on values. It calls for competent and painstaking stock clerks, so that none of these numbers may be "out," and the customer told he will have to be kept waiting until a "lot comes through the bleachery;" but with the most careful attention, it will be noted that there are times when this cannot be avoided. ✓

The converter must work three to four months in advance, and often longer. The goods must be made at the mill, freighted to the bleachery, and before they come out of process, there may have been an unexpected and unusual demand on some certain weight or finish that produces a temporary shortage.

The cotton goods are produced by cotton mills throughout New England and the South, and are made for the converter under contract. When the raw cotton reaches the mill and is run through the cards into robing, it then goes to the spinning frames and from there to the slashers, where it is sized to hold the fibres together, then dried and wound onto the spools and bobbins, in which shape it goes onto the looms and is manufactured into cloth, which is then shipped to the bleachery to be finished.

In this connection, a few words on the process of bleaching may be of more than passing interest.

As already mentioned, the cotton yarn in the mill is treated to a sizing before it can be woven into cloth. The warps are run through a machine called a slasher, in the size box of which is a prepared sizing for strengthening the warp thread and holding the loose fibre ends close to the thread to prevent "raveling." The threads thus



sized are dried on a steam drying cylinder. This size may contain a large variety of substances such as starch, soap, tallow, etc., and the woven cotton cloth also carries along certain impurities, as dirt, cottonseed oil, machine oil, and grease from contact with the loom, finger spots, etc., and although the cloth is in the gray state apparently clean, it is necessary to remove all this foreign matter from the fibre before the actual process of bleaching begins.

If a piece of cotton goods were taken directly from the loom and treated to a bleaching solution, the cotton would not be bleached except in spots where the bleaching solution penetrated the sizing on the fibre, as this sizing acts as a resistant to any chemical ordinarily employed in bleaching. If, however, the cloth is treated in such a way that the sizing, etc., are rendered soluble in hot or cold water, or a chemical, and may later be washed out of the goods, the process of bleaching then becomes very simple and limits itself to the application of proper bleaching agents with their following counteracting re-agents to produce the white desired.

The procedure in a cotton goods bleachery generally starts in what is known as the gray-room; here the gray bales, as they are called, coming direct from the loom, are opened and weighed out into lots. The bleacher tries to get into each lot only goods of a similar grade, weight per yard, width and weave, so that the one chemical degree of treatment will act on all parts of the lot alike. Ordinarily the goods for bleaching are made up into lots of four tons each; the end of each piece of cloth is sewed

## FINDINGS — LININGS

to the corresponding end of the adjacent piece in the bale by girls running power sewing machines, until the required weight of cloth is sewed into one long strand without a break. The variation in weight of the different grades of goods will give some idea of the variation in the lengths of the different lots. For instance, a two-yard goods, or a cloth running two yards to the pound will contain, for a four-ton lot, 8,000 pounds, or 16,000 yards, or 48,000 feet, or approximately nine miles to the lot. In a lot of goods weighing six yards to the pound in an 8,000 pound lot, the total yards would be 48,000 or a total length of twenty-seven miles for the lot. This point merely shows how the lots vary in length for the different grades of goods.

As the pieces are sewed together, each end of each piece is stamped in gas tar, with a distinguishing lot number and letter, so that each piece may be identified later in the process, and that all goods of the same mark and lot may be brought together for finishing. This tar mark is indelible.

When goods are to be finished with a clean face, all the loose hairs or nap must be removed from the surface, and for this purpose a plate singeing machine is used. When goods are to be singed they are run out of the gray-room in flat fold, and are passed at a speed of from 60 to 150 yards per minute over red or nearly white hot copper plates. These plates are heated to a temperature of approximately 2,000 degrees by means of an oil furnace under each plate, and the travel of the cloth over the heated surface is just fast enough to remove all the nap.

## THE BUILDING OF A SHOE

without taking the cloth with it. After the cloth passes over the heated plate, it enters a water box, and thence through a set of rubber wringer rolls, the object being to extinguish any spark that may be left in the goods. From this wetting-out machine, the strand is run over a reel and plaited down in a bin by a boy, where the size and foreign matter are softened by remaining immersed in warm or hot water for ten to twelve hours. In this steep the foreign matter soluble in water is dissolved out of the goods, and a sort of fermentation sets into the sizing and starchy matter, which is washed out when the steeped cloth passes from the bin through a washing machine into the boiling kier or tank.

In bleaching cloth, two systems are usually employed. The "lime and ash bleach," so-called from the fact that the goods receive their first boil in a milk of lime in a kier, and their second boil in soda ash in an ash kier. In a "caustic soda bleach," the goods are boiled in caustic soda alone as a chemical. The reason for making all bleached lots of the same weight or size is here evident. An ordinary bleaching kier has a capacity of four tons of cotton cloth. The most common type of kier in use is the central vomit pipe kier,—this kier is an iron vessel nine feet six inches to ten feet inside diameter, and ten feet high on the straight sides, with dished, or spherical top and bottom heads—the radius of curvature of the heads being equal to the inside diameter of the shell. In the top is an opening thirty inches in diameter, with a packed cover, which may be securely fastened down to prevent steam and water leakage.

## FINDINGS—LININGS

In the bottom is a sectional grate, the opening being about fifty per cent. of the total area, and below the grate is a well to hold a reserve of boiling water. In the well is a perforated steam coil used for boiling the liquor. Mounted on the grate level is an iron vomit pipe in the centre of the kier, from which pipe the kier derives its name. On the upper end of the pipe is secured an umbrella-shaped deflector, or bonnet, as it is called. This bonnet is removed when the kier is being filled with cloth, and a wooden plug is inserted in the pipe to prevent the descending cloth from entering the pipe. Kiers are designed to boil at any pressure, from atmospheric in open kiers, up to fifteen and twenty pounds gauge pressure, and at these high pressures are made extra heavy to withstand the internal pressure. For example, a nine foot diameter kier, boiling under a pressure of fifteen pounds has a total pressure of sixty-nine tons exerted on its upper head, and with the weight of the contents a total pressure of forty-six tons exerted on the bottom head. When the kier is full, the bonnet is put onto the pipe, and the cover securely fastened down. Water is then run through a pipe at the top until a sufficient depth is obtained; steam is turned on through the perforated coil in the well, and the water is brought to a boil. The pressure developed in the well by the boiling of the water, causes a rapid expansion of the steam and water mixture, until this expansive force overcomes the pressure head, due to the height of the column of water in the vomit pipe, when, with a sudden spurt, all the water is thrown out of the well, up the pipe against the bonnet, and is deflected back

## THE BUILDING OF A SHOE

onto the cloth pile, and finds its way with an even circulation down through the goods into the well.

The action is similar to that set up in a coffee percolator, and is always up through the centre pipe and down through the cloth, with a hot scouring effect, tending to soften and dissolve the foreign matter disturbed by the steeping process. When the water boil has continued for an hour or two, the water is drawn off, and a caustic soda charge is run into the kier at a density determined by the grade and character of the goods to be boiled. This caustic soda is made by dissolving commercial caustic soda crystals in water, or by making the caustic soda on the ground, by a chemical composition of fifty-eight per cent. alkali soda ash, and ordinary unslacked lime in an agitator, with water in proportion of twelve parts of lime, to twenty parts of soda ash.

In the caustic soda boil, the chief effect aimed at is the saponification by the alkali of the fatty bodies and vegetable oils on the fabric, so that these may be taken out of the goods as a soluble soap. The density of the caustic soda solution generally runs at  $1\frac{1}{2}$  degrees to  $2\frac{1}{2}$  degrees T.W. in the kier, before the boiling steam has sufficiently condensed to weaken the liquor. The quantity of fuel required to boil a four-ton kier for a period of twenty hours under a ten-pound pressure is approximately 2,500 pounds of coal. After the goods are taken from the kier, they are passed through a washing machine to wash out the spent alkaline liquor and soluble soaps, and in case of heavy goods, they are run through a solution of sulphuric acid in water, the density of which is about  $1\frac{1}{2}$  degrees

## FINDINGS — LININGS

to two degrees T.W. The effect of the acid is to neutralize any alkali left in the goods from the boil, and to decompose any limes left on the fibre.

The goods are next run into a machine called a chemic machine, containing a solution of chloride of lime in water commonly known as chemic, and here the first bleaching operation sets in.

The bleaching element generally used with the best results is chlorine, and has for its object the destruction of all the coloring matter remaining in the cotton fibre at this point.

After leaving the chemic solution, the goods are allowed to stand for twelve to twenty hours exposed to the air, to give the chloride of lime time to thoroughly bottom its bleaching effect. The goods are now run for a final chemical treatment through a washing machine containing a weak solution of sulphuric acid. This "white scouring," as it is called, removes from the fibre all the lime and resultants from the last chloride of lime treatment. The bleaching is now finished, and there is only the final "white washing" as it is called, to remove all chemicals left in the cloth. The goods are now ready for finishing.

The finishing operation for white goods consists in mangling to squeeze out the water after bleaching; to open the goods from the rope form into the full width; to flatten the piece down; to lay the warp and filling threads square with each other, and to generally roll the goods up in approximately 500 yards rolls, about two feet in diameter.

## THE BUILDING OF A SHOE

After the mangling, the goods are dried on cylinder dryers, and starched dry, or they may be starched wet from the water mangle, as desired, and then dried.

After the final drying, they are run through a sprinkling or damping machine, to prepare them for the calenders where the finishing is put on. After calendering, the goods are yarded, folded, branded, tied, and packed as requirements for delivery may call for. They are folded generally eight-fold, but occasionally sixteen and even thirty-two, the object being that so many thicknesses of cloth may be cut at one stroke of the knife.

This merely gives a slight outline of the process of bleaching, in addition to which there are the many sorts of brown finishes, commonly known as unbleached, and the various dyeing methods employed.

As previously stated the cotton cloth is produced by the mill for the converter, under contract, specially designed and constructed for the purpose for which it is to be used; specially treated and finished at the bleachery,— all with a view to that particular part of the shoe for which it is intended. The high results that obtain to-day have been brought about by specializing these lines, while careful study is still being given to these requirements, coupled with a thorough knowledge of the merchandise and its treatment.

## VII

### FINDINGS — METALLIC.

J. W. TERHUNE.

---

**I**N one way or another, metal has for centuries played some important part in the building or the ornamentation of the shoe. In the earliest times, it was almost wholly ornamental — the show of the brass, the silver or the gold buckle, and the glitter of little chain devices; later, metal was pretty equally divided in ornament and usefulness. To-day, it must be conceded that while more metal than ever in the history of shoemaking enters into the construction of the shoe, it is put there for utility and substantialness rather than for any other reason; though, of course, the fine shoe has its ornamental buckles, etc., the same as ever.

In the ordinary shoe there is more metal than most people are aware of, yet each bit of steel, or iron or copper — whatever it may be — is intended for the strengthening of the shoe, and to ensure its lasting qualities. There are always the nails, that are used in “slugging,” or putting the top-piece on the shoe bottoms, to prolong the wear, and as a protection for the shoe. Lasting tacks have their temporary use in the lasting-room of the shoe factory, where they hold the uppers of the shoe to the last.



## THE BUILDING OF A SHOE

The shank gives both strength and resiliency to the arch of the shoe. There are different kinds of shanks — combinations of steel and leatherboard and of steel and wood, and also the plain steel shank. There are both rights and lefts, and in many instances they are taking the place of arch supports, which are generally made of leather, felt or nickel.

Sometimes wire enters into shoe construction. For example, in a cheap or heavy grade shoe, it is used to attach the sole to the upper.

Eyelets, well made and neatly set, have of recent years become an undoubted adornment to the lace shoe. Years ago, a shoe was made up, selling at retail for \$4, with eyelets that would soon wear brassy and give the foot-wear a cheap appearance. To-day, we have an eyelet that will absolutely hold its color; its celluloid top prevents its wearing brassy. Such eyelets are to be found in almost any line of goods that now retail from \$3 upwards. Enamelled eyelets are also in use. As a matter of course, hooks for securing lacings, etc., are to be found in all kinds of shoes — men's, women's and children's.

Buttons, metallic or partly so, have their leading place in shoe manufacture; they are used extensively in nearly all grades of shoes, especially ladies' shoes — at the present time the latter shoe being made with thirty-two buttons to a pair.

- The steel buckle is both useful and ornamental, and is found largely on men's, women's and children's high cut storm boots. Slides, which are made for ladies' pumps and other low shoes, are of silver, gun-metal and brass.

## FINDINGS—METALLIC

In some shoes, customers insist upon having a steel plate for the bottom of the heel, which keeps the heel straight and prevents it wearing out quickly.

But little else of more importance than these can be mentioned that enter directly into the composition of the shoe. Outside of these, there are many metallic findings that share in constructing the shoe — such as the knives in the cutting-room, and the great variety of needles in the stitching-room.

## VIII

### INKS, STAINS, WAXES, ETC.

J. G. REDSHAW

---

**T**HE wearing qualities and the attractiveness of the modern shoe are probably the leading essentials that are striven for by the manufacturers. The inventive spirit of the age keeps pace in shoe-making with everything else that denotes progress in human affairs, and very ingenious, as well as practical, have been the contributions to those now necessary products everywhere used in the finishing of the shoe.

The finishing findings, as one might call them — inks, blackings, stains, waxes and cements — are conceded to be equally valuable as conducing both to the durability and the adornment of the shoe. Their combined application by skilled hands, as well as by many machines, not only adds substantiality and solidity, but grace and gloss to the shoe, and is an invaluable ally to every other feature of shoe-making.

Originally, the finish of a shoe was made by the use of a scraper, or by sandpaper, the smooth shoe bottom being thus produced. Then came the buffing machine which removed the rough grains from the leather.

At first, shoe stains of whatever nature were simple mixtures, and ink or blacking was made of vinegar and iron. The old-style burnishing inks, which made their

## INKS, STAINS, WAXES, ETC.

appearance about 1860, were made of dyewoods, and ten years afterwards, the firm of Fletcher & Dwyer brought out a burnishing ink capable of producing still better results, as applied under friction with a hot iron. About the year 1875, M. J. Downing & Co. produced the famous Sagamore burnishing ink, and since that time many names and varieties of ink have been placed on the market.

Inks are applied to the heels and the edges of the soles of shoes, the purpose being to color the leather and add to the appearance and style of footwear. Paints are also in use on rough leather, to quite an extent.

Wax finishes are divided with stains and paints, the former being made in all colors; and they are applied with a roller, also with the use of wax, which increases the friction.

Blacking is the oldest material to be applied to the shoe to make it attractive.

About the year 1888 arrived the new-method inks, to which the old burnishing inks then gave way. With their advent came a new process of finishing them, upon their application to the shoe.

As to waxes, the old-time shoemaker used the "heel-ball," made of beeswax or bayberry tallow, for lubricating the iron and producing the polish. This was improved upon, and to-day a hard black wax is in use for polishing heels and edges; while a stick polish, applied to a friction roll, is used for shoe bottoms.

Shoes were formerly made with the soft toe. Upon the demand for a hard toe, it became necessary to make

## THE BUILDING OF A SHOE

the leather stiff and hard, and hence the hard box toe. To produce this, the box toe gum is used. At first a water preparation was used entirely. As time elapsed, a preparation to withstand water was manufactured, and now the box toe gum is placed in all high grade shoes. This is made to prevent the box from falling down either on account of the weather outside the shoe, or the perspiration on the inside. As practically almost every pair of shoes at present manufactured has the hard box toe, the use of the hard box toe gum by manufacturers is one of the most essential things in the building of the shoe, in order to make it conform to present-day styles.

Adhesives and glues are in constant use, and often applied by machines for securing linings, etc.

Cement is applied to the channel on the shoe, and to hold the channel in place and to cover the stitches. It is also used on uppers. At first it was made of rubber and naphtha—now various other materials enter into its manufacture. It is used for folding, in the stitching-room; for fillers, in the stock-room; for sticking taps on the soles, in the stock-fitting room, etc. Cementine goes into the stitching-room, for doubling, re-enforcing and backing, and practically to re-enforce the shoe throughout.

## IX

### THE TAG AND ITS USES.

GEORGE GREGORY

---

THE medium used to convey to the factory the orders of the trade is called the tag.

In the list of subjects that have to do with the building of a shoe, there is hardly any that has received more consideration the past few years than this. A tag may be perfectly satisfactory to the office, and not at all suitable to the manufacturing end, and *vice versa*. While it is necessary to suit the factory, it is equally necessary to produce a tag that will permit of its being useful, also, for office and financial records.

How to write a tag requires expert consideration, especially in some factories where styles are numerous, and where a mixed nationality is employed, as is the case in the shoe trade to-day. If numbers are used in calling for this or that tip, heel, sole, upper and last, to say nothing of trimmings, or inside construction or outside finish, a key to numbers must be in every department, easily accessible to every employee interested.

It is quite easy, of course, for English-speaking employees to translate the numbers by the key, but hardly so for those of foreign tongue. The plainer the tag, the less likelihood of mistakes occurring; and the necessity of interpreting the tag, which is silently calling for just

## THE BUILDING OF A SHOE

what the customer wants, is best arrived at by having as much as possible of such wants printed on the tag, and all other descriptions plainly typewritten or stamped — thus demanding exactly what is desired.

There are many different systems or methods of writing tags; the old-fashioned way can hardly be called a system, while a very good system can be built around the new way. By the new way, one no longer needs to rely upon the old, used-up tags, which have gone through the shop and been handled to such an extent that they become objectionable for further reference.

The more up-to-date method, which is explained herewith, does away entirely with the use of the old tag. After the shoe is made, the tag does not have to be kept and filed, but, with less work, gives a more complete office record. In fact the latter is thus more accurately handled, and details are more correctly kept, and with a smaller clerical force than would be necessary were the old method of stamps and copying preferred.

The factory cannot work without tags, which start the wheels, keep them going, and connect the outside shoe trade with the producing end. As orders are received, tags are made out; but how to enter tags into the factory is a serious question. How to feed the plant gives the sales end serious jogs from time to time, as all manufacturers know that only so many tags of a certain kind can be handled in the stitching-room, according to the number of machines for certain work; in the lasting-room, only so many on certain lasts, because of only just so many lasts in stock.

## THE TAG AND ITS USES

The story of the successful handling of the tag from the office to the factory would fill a volume; but from the office standpoint, with the factory company operating the most serviceable method of tag-making (which comprises almost all there is to say regarding one very good system of tags), the following is a practical résumé.

According to the new method, tags are written out on a flat-bed typewriter, a machine built especially for the purpose. The method has many advantages, the main one being that the tags are exact duplicates, which thus eradicates mistakes formerly made through copying the various stubs by hand, and saves much expense to the manufacturer. Also, many more tags can be written out in a day's work, and, since they are typewritten, they are naturally more legible than if written by hand.

The number of copies of tags varies according to the needs of the individual manufacturer. Some have as many as ten and twelve, while others have only four or five. The number commonly used is seven, one each for the office, shipping, insole, outersole, lining, trimming, tip and main tag. The office copies are placed on file, and a complete record is thereby preserved of the exact construction and disposition of each case of shoes; and if the customer desires to order any shoes similar to what has been previously made for him, all that is necessary to do is to refer to that particular case number, and the information is obtained. Each customer's order, no matter how many tags it consists of, is separated in the file by a recapitulation slip. On the latter is included the customer's name and address, the shipping instructions and



## THE BUILDING OF A SHOE

the date when the goods are wanted, the terms, rating and any special instructions necessary concerning that particular order.

Each individual lot is listed according to the case number, pairs, price and the total amount to be received for each lot, together with the total amount that the entire order should be billed. When any one of the different lots is shipped, the date and the number of pairs is marked alongside of that particular lot, and a comparison is made between the amount billed and that which is figured on the slip,— so that it acts as a double check, and ensures the manufacturer against mistakes through billing. By glancing over these recapitulation slips, it can also be ascertained whether every lot that is made is charged to one customer or another, and whether there is any leakage in the output.

An index file in alphabetical order is kept of each customer, and the first case number of the series of each order is entered on the index, so that a record may be obtained almost instantly of all the shoes that have been made and that are being made for each customer.

If it becomes necessary to locate a certain order in the factory, the first thing that must be obtained is the case numbers, and with this card index the work is simplified. From these slips are also written out the shipping cards that give to the shipping-room the rating and all other information necessary for the shipment of the shoes.

The shipper's copy is used by the purchasing department in ordering the various parts that the manufacturer does not wish to carry a large supply of, desiring only to

## THE TAG AND ITS USES

order a sufficiency for immediate needs,— such as bows, fancy buttons and eyelets, cartons and cases, soles, heels, top-pieces — any special thing, too, that is required on the shoe that is out of the ordinary, and that it may take some time to obtain. So that, as soon as the shoes are started in the works, steps are taken to order and have on hand all the material necessary, in order that there may be no delay in the factory.

The inner-sole and stock tags are used in the sole leather department to cut and fit the sole leather stock. Work on the inner-sole is so begun that when the shoes are all fitted and ready to be assembled and lasted, the inner-soles are also ready, and as soon as the shoes are lasted, the outer-soles are sorted out for each lot. By this method, it is unnecessary to have a large supply of stock fitted ahead, thus using up much valuable space, and tying up a lot of money.

The lining, trimming, tip and main tag are used in the cutting-room to separate the various parts of the shoe, the object of these duplicate tags being that several persons can work on the different parts at the same time, and thus assemble them together more quickly.

This also applies to the stitching-room, as it enables various operatives to work on different parts of the same lot at one time.

As soon as the many parts are put together, and the uppers are all stitched, the lining, trimming and tip tags have served their usefulness and, being needed no longer, are destroyed. Through all the other departments until

## THE BUILDING OF A SHOE

the lot has been shipped, the main tag is the only one that is used.

All the duplicate tags are printed on a thin but serviceable stock — they must be thin in order to obtain the required number of copies. The main tag is printed on a tough tag stock, as it is put to considerable use in the factory, and has to be of substantial enough material to withstand the usage. Care must be had in securing a good quality of thin carbon paper, as to a great extent the clearness of the copies depends upon the carbon paper that is used.

## X

### THE OFFICE.

FRANK P. ABORN.

---

**H**ERE is to be found the daily business record of the "Building of a Shoe." The office of the shoe-manufacturing concern is the depository of the order of the customer and the salesman, and the important depot from which instructions of whatever nature regarding quantity and quality of the shoes to be made are sent into the works. Its bookkeeping and other departments are among the most systematic in the business world — the firm's headquarters, from which is demanded of the factory the best it can perform, and whence is guaranteed to the public the product for which it has set up its standards.

Many methods are in use in the office of the shoe manufacturer, each having its advantages. The efficiency and thoroughness of the following office system has been tried and proven, and it is described without the use of technical terms, so far as possible, for the ready comprehension of the every-day reader.

The salesman submits the order that he has set down upon his blank, which contains the sample number, general description, and any changes desired in the make of the shoe. This order receives its O.K. from the credit clerk, and it is then put into the hands of a clerk to be

## THE BUILDING OF A SHOE

listed. By the way, each salesman has his own list of customers, and the order contains the shipping date, total value, etc. He is also given credit for the mail orders from his territory. These the clerks list with the date of the receipt of the order and the date when the shoes are to be shipped.

The listing clerk also keeps track of the kinds of shoes that go through the factory, also the total number of pairs in the works. The tags are made out in the office, and before the goods are started into the works they are numbered consecutively on a daily sheet; and tags are selected with reference to the dates of shipment, as well as with reference to the proper proportions of the different lasts. This is all preliminary to the making of the daily sheet.

Collectively, there are three sheets of instructions — for the office, for the cutting-room, and the factory.

The office sheet is kept in the office itself, in order that the checking clerk there may check off the work as it proceeds through the factory; and this sheet also gives the office, the customer's name, the price of the shoes, name of the salesman, the salesman's commission, etc.

Duplicates of this sheet are made as follows: The cutting-room sheet, which remains in the cutting-room, where it receives the record of the upper stock — its price, the kind of stock, the number of feet of stock, and lining cutting instructions. This constitutes the cutting instructions for this room.

When the shoes themselves are assembled in the cutting-room, they are sent with a factory sheet to the stitching-room, where the uppers are fitted.

## THE OFFICE

On these sheets, also, are found all the details of the labor of cutting, upper fitting and bottoming, which details are placed on the reverse side of the office sheet.

The office usually has a system of keeping track of lasts in the works, that are particularly active and latest in style. When the salesman's orders come in, a clerk transfers the runs of sizes to a sheet prepared for that purpose, under the headings of the different widths and the different styles of lasts.

At a certain period, this clerk totals the sheet, and transfers the result to a "Record of Lasts." Thereby it may be seen how many pairs of a certain style and width have been sold, in order to know what new ones to order. A record is kept of the number of pairs of a size on a width of each style, and orders are put in for lasts based upon this record.

At the beginning of the season, a line of samples is made out in the office, which is to go through the factory and represent a line that it is believed will be salable for the following season. In conformity with the samples, sheets are made out for figuring costs, and on the basis of the latter the selling prices are made. The cost sheets are quite complete, as they comprise a specific list of the materials used, summing up of the labor for each department, the findings of each department, the royalty paid for the use of machines, the "overhead" or manufacturing expenses, the discount allowed to the customer, and the commission paid to the salesman. It goes without saying that it is very important that these figures should be correct.

## XI THROUGH THE SHOE FACTORY.

J. L. O'NEILL.

---

**T**HERE can be but few people who are not informed as to the simple means and methods of old-time shoe-manufacturing. Indeed, the story of the little old ten-footer and its shop's crew is an oft-told tale. But the stupendous stride that a half century of improvement, progress and invention has made, finds the shoemaker of to-day the skilled mechanic in some one or other of the extensive departments of the modern system of shoe-building, that is away beyond the realm of the imagination of the man who once laboriously made an entire shoe by himself.

The evolution of the business has been very striking — almost picturesque as to the part played by wonderful inventions — but sensible, practical and satisfactory. And this is the testimony of veterans who have observed and accepted the changes as they have developed.

It is no simple task to submit an explanation of the processes included in the manufacturing of the shoe "in the works," to a multitude who know nothing of such processes. For so detailed are the operations, and so great the variety of machines employed, the demand for new invention being so continuous, that before a visitor

## THROUGH THE SHOE FACTORY

may have completed his round of the factory, someone has facetiously but perhaps with some truth remarked that a new machine may have been installed that explains away much previous explanation.

But let us go into the factory, and at least witness the work of the departments, as the material is passed along, to at length result in the completed shoe. As the story of "the works" in all its details would fill a volume by itself, the following is intended as an untechnical survey of the journey of the shoe through the factory, without reference to the scores of machine-aids to its progress, as the machines are to be described under another heading.

The tags which denote the style of shoe, the number of pairs and the different widths and sizes, are first sent to the cutting-room, where the uppers are cut as required. Before the operative begins his work here, the principal requirement is the selection of the stock, which selection is determined by the quality of the shoe to be made. The next important move is to determine the number of feet that is required, for, as lots vary in the number of pairs and in the widths and sizes, it is evident that no two lots can take the same number of feet. This accomplished, the skins are then given to the cutters, who must be experts not only in placing the patterns, but in judging how best to cut the skin without injuring the quality of the shoe. Cutting is done on blocks made especially for the purpose, the cutter using a small, keen-edged knife — although cutting by machine is in vogue in some factories.

While what are known as the outside cutters are cutting



## THE BUILDING OF A SHOE

the outsides, auxiliary tags are given out to the lining and trimming cutters, and as each finishes his part, it is sent along to the assembling-room where the various pieces are brought together and are ready for the stitching-room.

When one enters the stitching-room, the wonder is how it is possible to get the different pieces of the shoe together without their becoming mixed up — for in an ordinary pair of button boots (for example) there are forty-four different pieces. To begin with, the size is marked on every part; then the linings and the trimmings are sent up one line of operatives, and the outsides are passed along in another direction; and these meet when at length they are ready to be put together.

Meantime, while these two lines of work are underway, the vamps and tips are proceeding in another direction, and these in due time meet the uppers, which are now ready to be vamped, which is stitching the upper and lower pieces of the shoe together. As soon as the vamping process is completed, the work is packed and then inspected and sent on to the lasting-room.

In the stock-fitting room, the shoe soles make their appearance, all blocked out in different grades. These go through various processes by machine, in which they are moulded, channeled, gemmed and made uniform. When graded and sorted, they are ready to meet the uppers of the shoe in the lasting-room.

Up to this point, all shoes are made the same, but now the operations differ according to the kind of shoe that is to be made, namely, the welt, the McKay and the turn shoe.

## THROUGH THE SHOE FACTORY

The lasting of the shoe consists in putting in the box, counter and innersole and fitting them over the last. This is a notably important part, for the proper shape of the shoe depends upon this operation. The uppers now being tacked onto the last, they are sent to a machine which trims the surplus stock from the bottom of the shoe.

Now as to the welt shoe, welting consists in sewing on a narrow strip of leather around the bottom of the upper through a channel which had already been made in the innersole, the object of which is to sew the sole through, instead of sewing through the innersole. In a McKay-made shoe, tacks are driven into the innersole and clinched on the inside, the sole being sewed through the innersole. In a turn shoe, the outer sole is tacked onto the last. The shoe is lasted inside out and then turned, no innersole being used.

Now the shanks are tacked in, and the forepart of the shoe filled with a cork mixture, so as to ensure the evenness of the bottom part of the shoe. The outer sole then being placed on, is put in a machine under heavy pressure so as to conform to the shape of the last. Next comes the sewing of the sole to the welt by a machine that is capable of doing three hundred pairs a day — after which the heels are attached.

The shoe has thus been brought together, and it is now to be put into the hands of the finishers. These operatives first place the heels in a machine which gives them the shape and bevel desired, after which they are sandpapered by machine to give them their smooth appearance. The soles are then trimmed for uniform extension, and then

## THE BUILDING OF A SHOE

edges and heels are blacked and burnished with a hot iron. As the bottom of the sole up to that time was yet in its natural state, this also is sandpapered, to give it smoothness. After receiving a staining in any desired color, the shoe is ready to be sent to the packing-room.

## XII

### SHOE MACHINERY.

JOHN J. HEYS.

---

**T**HE shoe, having reached the height of its perfection as a most important feature of the apparel of mankind to-day, owes that standard of excellence to the fact that it is machine-built. No former age has ever produced footwear that is so thoroughly capable of resisting the elements and also of passing the criticism of the masters of style and elegance; and it is to the rapid marshaling of the invention of remarkable machines, in the hands of the most skilful workmen of all time, that the credit of the evolution of the modern shoe is due.

The development of the steam engine had much to do with helping to make machinery used on shoes practicable, for although the steam engine was invented in 1663, by Edward Somerset, and used for lifting water (he, too, founded the turbine engine, which we are apt to think is of modern origin), it was not until 1775 that James Watt made his improved engine, it being such an improvement that he is rightly called the originator of the practical steam engine. These facts are mentioned to lead up to about the period of the commencement of the 19th century for, in 1790, the first chain stitch sewing machine was made by Thomas Saint. When men began to realize most fully that machinery was to become a factor in our

## THE BUILDING OF A SHOE

commercial life, it was about this time that Watt got fairly underway to furnish a motive power. Up to this time shoes had been made mostly by hand, but in 1811, Napoleon the First, in his great attack on Russia, with the aid of Austria and Germany, had an army of 600,000 men so badly handicapped for lack of shoes and clothing that he offered rewards and inducements to engineers to produce machinery that would clothe and shoe his armies. Thus we find very soon afterwards Julian Bernard of France having numerous patents on shoe machinery issued to him. Strange to say, some of these machines were of the most complicated construction, and contained ideas that are to-day used in many of our successful shoe machines.

In 1820, the gun stock and last lathe was invented, of which further mention will be made. It was not until 1830 that the first sewing machine was manufactured for sale, forty years after Thomas Saint's machine. These machines were made of wood and used for sewing clothing in France, and were destroyed by an enraged mob. In a modified form another machine was produced, made of metal. These machines were also destroyed by the mob. With such odds against the inventors, they still were not sleeping, for Howe, of the United States, made in 1846 the first shuttle and lock-stitch machine reduced to common practice. Although not practicable, still his patents were so strong that no one could make a lock-stitch machine without infringing his patents. The consequence was that about \$2,000,000 was paid over to him, or rather to his associates, for royalties. These people

## SHOE MACHINERY

seemed to be fully possessed of the commercial spirit, for the patent office finally refused to give them a reissue.

When we realize that they collected more money as a royalty on each machine than we now pay for a beautiful house sewing machine, we can appreciate the fact that the people were then keen for progress.

In 1857, Wilcox & Gibbs patented in the States their famous little sewing machine, probably the first absolutely well built machine. This machine is still extensively used, and, although it has been on the market over fifty years, is to-day capable of making 3,000 stitches a minute.

All of the sewing machines referred to are of the type that was used on the uppers of boots and shoes, and although there have been about seventy different kinds of stitches developed through inventions, there are but about three that have survived the test of time. These might be rightly classed as chain stitch, crochet stitch and loop-lock stitch. All latter-day machines come under these heads, and are rather improvements than inventions, except in details. Singer, Wheeler & Wilson and the Union Special have advanced the art of fine work in sewing to a high degree of perfection. While speaking of the stitching-room, it will be well to note that many ingenious machines have been developed there, Joseph Mathison's button-sewing machines, in the early 80's, and eyelet-setting machines, being noticeable. John Reece's buttonhole machine, too, although on the market many years, is still extensively used, being a work of art and high workmanship.

## THE BUILDING OF A SHOE

As to the subject matter of sewing, whereby the insole of a shoe is attached to the outersole, the first practicable machine for that purpose was credited to Blake, it being known in this country as the McKay sewing machine. This machine was invented about 1859, and has had a most wonderfully successful career, having stood the test of time to a degree that clearly proves the high class of workmanship that was behind it. Coming upon the market at a time when the Civil War was robbing this country of its able shoemakers, it was given a start that under normal conditions would have had to be purchased at a very high price. This fact also made a precedent, and great encouragement was unconsciously given to all kinds of shoe machinery projects. Besides, the public was thus educated to welcome all improvements, instead of placing all kinds of obstacles in the way of the inventor. This liberal spirit in Lynn had much to do with making this city the greatest shoe centre of the world.

The first pegging machine was invented by Gallahur in 1851. This machine attached the outersole to the upper and insole by means of wooden pegs. There were numerous machines developed for this purpose, the "Era" pegger being the most popular, but it was not until recent years that a high excellence was acquired in this art by introducing a horn into this type of machine, the Davey pegger being of that construction.

Around this period, which was controlled by the Civil War, we find the art of attaching the soles and uppers together by wire was quite prominent, some smooth and

## SHOE MACHINERY

some in screwed form; but none reached the height of excellence until Louis Goddu of Boston made his famous Standard screw machine. For design and beauty no machine excelled his, and his fertile mind produced numerous machines for slugging, loose nailing, quilting and tacking, all of the metallic kind, which are used to-day. It can be said that he was one of the few men that made shoe machinery production a science, as well as a commercial success.

Following the period of the introduction of the McKay sewing machine, which can be safely stated as being the foundation of the real shoe industry, a cheap and comfortable shoe was made possible to manufacturers. Realizing this, coupled with the spirit of the times, we can to-day appreciate the welcome that was given to any improvements that were submitted to the test, against hand labor. In fact, the shoe shop had hardly become to be known as it is now, for shoes were sewed on the McKay machine, and then taken to the homes of persons to finish, a practice that is still in existence in many places in Europe. But it did not take long for the keen Yankee to fully realize that uniformity could not be maintained by such methods. Soon after 1865, factories were being put up, which were looked upon with pride.

This review of shoe machinery would be incomplete if mention were not made of Charles Glidden, of Lynn, who did much for heel nailing, heel shaving and heel compressing. He it was who produced the McKay heeling and shaving machine, making it possible to do both operations at once, and it was he who was among the



## THE BUILDING OF A SHOE

first to load a heel with nails by machinery, which to-day is common practice. The National heeler, made famous by Mr. Raymond by his almost daily issued patents, they being so numerous granted to him, enjoyed prominence, especially when E. Woodward applied his attachment to it, which received a heel all loaded with nails ready to be instantaneously attached to the shoes. But these machines have been generally superseded by the Mayo attacher, which loads nails to the nailing plate instead of first loading the heel, as did Woodward. Putting a heel on a shoe by machinery looks like an easy task, still it is doubtful if more money and thought have been put into any operation on a shoe than in this problem, and even to-day we find the foreign manufacturer still attaching the heels of his shoes in an entirely different method. It is almost the universal method in England and France to attach heels by driving the nails from the inside of the shoe, which makes the heel very secure, but in this method the top lift is first applied to the heel, and both attached to the shoe at the same time and one nailing, while in the methods employed by manufacturers here the heel is applied first, leaving the nails sticking up to receive the top-piece. The method mentioned is known as "inside nailing," requiring a very simple, although rather slow machine, reminding one very much of the old style letter press, with a post to receive the shoe.

Hence, we find an avalanche of machines, including buffers, scourers, edge setters, edge trimmers, sole levelers, sluggers, heel shavers, heel nailers and heel compressers, all coming along with their several detail improvement.

## SHOE MACHINERY

Stock companies were as numerous as shoe shops, all expecting to get rich out of their pet scheme, until some unforeseen obstacle arose that would dampen the ardor of the most enthusiastic. This kind of thing went on, until the well tried and acceptable methods were fully established, which reduced latter-day inventions, with very few exceptions, to matters of pure construction, rather than invention. It is this latter fact that makes it so hard for the man with a new idea to fully understand the existence of infringement on a pioneer patent.

Speaking of invention and what it might be, reminds one of the circumstances of the McKay sewing machine horn, upon which all shoes are placed to be served in the original operation of the machine. When the revolving horn was applied, the operator used to sew up one side of the shoe, take it off, and sew down the other side. One day a certain operator, then working in New Hampshire, went to sew some shoes when under the influence of liquor. On this occasion he forgot to take off the shoe, but instead swivelled the horn around as he came to the toe, and sewed round the shoe all right, much to his surprise. All operators have been doing likewise ever since. This was not invention, but certainly was discovery, which is first cousin to invention.

From about 1867 to 1884, the McKay sewed shoe was but little disturbed by the introduction of the turn sewing machine and the Goodyear welt. Although the welt machines were living the struggling life for many years, Dancel being the originator of the machines, about 1884, the lock stitch outersole sewing machine began to make

## THE BUILDING OF A SHOE

its presence known. Since the patents issued to French and Meyer, in 1889, the period of making welt shoes with all the accessory machines has been one triumphant march of success, until we find more of this type of shoes produced by this method of making shoes year by year, and fewer of McKay type, showing that the public are getting surely educated to buy what is the most comfortable shoe, although it does cost a little more. During this period just mentioned, the lasting machines were receiving close attention, for about 1881 the machine which is being universally used and known as the Consolidated, or "Nigger Head," was struggling for an existence. This was made in Lynn by Metzeliger, who produced his first invention under the most unfortunate conditions, working on it for years before he got anything like a workable machine. Far-sighted men of Lynn and Boston saw the possibilities in this machine.

About this same time, other machines using tacks to hold the uppers and insole together were meeting with marked success. I refer to the Boston tacker, invented by E. Woodward of Boston. This machine lacked the presence of pincers. The Consolidated, with the aid of Ladd, the inventor, and Mr. Noble as an organizer, eventually dwarfed the Boston tacker. S. W. Winslow came upon the scene about this period and by his energy excelled the Boston tacker and other lasting machines. Still traveling over this same period, we find the Ideal and Chase lasting machine, known as "Bed Lasters," forging ahead in their particular line. These machines use a former on the heel and toe of the shoe, practically mould-

## SHOE MACHINERY

ing the uppers to the lasts. This method made a high production of excellence in manufacturing, besides leaving no tacks in the finished product, being specially used on Goodyear welts. The art of lasting is an almost inexhaustible subject, having presented more obstacles to the inventor to overcome than any other branch of the business, but to-day we find but few shops that have not some of the previously mentioned methods in vogue. The latest acquisition to the system of lasting is the pulling-over machine, which to most people seems a very recent invention; still it has been years since the idea was first carried out by McFeely, who has worked on it with untiring energy and excellent support of the United Shoe Machinery Company until the machine represents a valuable asset to shoe-making. It precedes the lasting machine in operation, driving five and sometimes seven tacks simultaneously through the upper into the insole, while pincers operate on the upper, from toe and sides.

There have been an indefinite number of machines made to produce more and tasty work in many branches of shoe-making. When we consider that over fifty machines are used in the production of a pair of shoes, apart from the uppers, we can then try to comprehend what time and thought have been put into the art, and still shoe-making by machinery is in its infancy, so far as automatic production is concerned, for the simple reason that a machine to-day has to possess the qualifications of instantly handling any size and style shoe put up to it, whereas, if shoes were made on the general lines that all other wearing apparel is, there would immediately be

## THE BUILDING OF A SHOE

an evolution in production. As an illustration, no manufacturer of underwear would think of adjusting his machinery to turn out two or three articles, and then change over to another size, taking up more time to make changes than produce the work. No manufacturer of hats, collars stockings or any commodity turns out work except on a mill basis. Still, we daily chase a "tag system" of two pairs of this size and four pairs of that size and so on, which makes perfect automaton machinery almost impossible in most instances, all without any gain, except to pursue a custom, which is a hard law to defy.

The upper cutting machine, extensively introduced in this country, has been very successfully used abroad for a number of years, and bids fair to become an established part of shoe production by machinery, and may be considered the first machine to take the place of hand cutting on uppers. It is of the dieing out type, dies being furnished of light and cheap production, and the principle the same as the ordinary dinker, except in the application of power.

Apart from the machinery mentioned, there have been many inventions that are not used in all shoe factories, but still have direct connection with the shoe trade, among which is the last turning lathe, which turns and grades lasts automatically to any size or style after the sample has been developed by hand. It was invented as far back as 1820 by Thomas Blanchard, of Massachusetts, and has been greatly improved by Gillman & Son, of Springfield, Vermont.

## SHOE MACHINERY

The stiffening moulding machinery has also been prominent in the production of good shoes, stiffening making forming the business of many large factories, apart from the shoe shop. Although many shoe manufacturers are again making them a part of their outfit, Simonds of Woburn was among the first to make a commercial success of this type of machinery, while W. J. Young and later W. C. Stewart brought out valuable improvements in recent years.

Then we also have machines for grading patterns that are instrumental in producing good fitting uppers for shoes. The Hartford and the Parrott hand power grading machines were used quite extensively until lately, when the Reed power machine came into prominence. There are, also, heel building, heel compressing, and box toe machines that come under the head of shoe machinery, etc.

In our review of the shoe machinery industry, it is obvious that the growth has been a slow one, like everything that is made to stand the test of time. We find ourselves to-day practically one hundred years from the time man commenced to realize that the aid of machinery was necessary, still we are striving to supply the demands of the consumer. Napoleon sounded the keynote, and we still have it singing in our ears, continually hoping and trying to add our little mite towards the goal of perfection.

## XIII

### PACKING.

HENRY CAHILL

---

THE process of packing the shoe, as the latter is passed along on its way from the manufacturer to the wearer, is not comprehended merely in placing the completed stock in boxes and sending it to the shipper's department. This work is dovetailed with that which has preceded it, and with that which follows, so that its value to shoemaking itself is considerable.

The packer stands ready to receive the shoe from the finishing-room of the factory, from the hands of the bottom-finisher, in fact, who is expected to have done his part in finishing the shoe bottoms. Just before the packer takes up his work, the goods are examined by an inspector who traces to their source any faults he may find.

Now the last is pulled out of the completed shoe, and the latter is given to an operative who pastes in felt heel-pieces and linings. This done, a monogram machine stamps the manufacturer's monogram on the sole. Cleaners and ironers then take up the work indicated—different kinds of leather being cleaned in different ways—thus: a black Suede shoe is scraped with a knife and a black Suede dressing is applied; a gun metal shoe is both dressed and ironed, the work being done on the Miller treeing

## PACKING

machine. A kid shoe is ironed and dressed with an iron heated by electricity—the ironing removing all remaining uneven surfaces, wrinkles, etc., and allowing the shoe to stand up well. In the Russia calf shoe, stains are removed and the shoe is then polished. The shoe is creased in most factories by the creasing machine, heated by electricity, after which an operative inserts the shoe laces, or buttons, as required.

Patent leather shoes undergo a process of tip-fixing, when the tips are filled with a No. 1 filler, and cut down with a No. 2 filler. Russia calf shoes, when finished, go to repairers in their line. All pump shoes have bows placed on them in this room. The shanks and heels of all shoes then receive a thorough brushing up, when they are packed in boxes and sent on to the shipper.



## XIV

### SHIPPING.

ROLAND LUCE.

---

THE phrase "delivering the goods" loses the slang suggestion, and becomes applicable enough as it refers to the work that is done by the shoe shipper and his squad.

It is the shipper who assumes the responsibility of those details of the business of the shoe-manufacturing concern that have to do with the finished product of the factory. Shipping and system are synonymous. Tags, receipts, lists and orders prove their practical usefulness at every step here, and that which is not capable of being compared with an original order has no place in the thoroughly business-like shipping department. In general, the following are the methods used in the shipping-rooms of most large manufactories, where goods are carried in stock.

To begin with, all goods are received from the packing department, with tags attached, and with slips giving the number of pairs each lot contains—which are carefully checked and compared with the tags in order to prevent any errors. Also, a receipt is given for the goods.

Every tag is carefully scanned, and, if marked for stock, goods are placed in racks ready for the order clerk who

## SHIPPING

ships them up. Special styles, which are only made on orders, are marked up for the customers designated on tags, and are placed in special racks, to be shipped at the dates mentioned by the customers.

The distribution of goods by a shipping department requires a vast amount of detail, in order that mistakes be avoided; and this means thorough systematization in handling goods. The seeming reiteration of this thought will be appreciated by every shoe shipper.

Orders are received daily which have to be entered by number and then given out to order clerks for shipment—except in the case of special styles, whereupon they are given to the tag department, so that goods may be put into the works to make.

Regular styles are taken from the stock racks, placed on counters, and shipping instructions made out. These are then checked off, in order to make sure that no discrepancies occur as to sizes or widths.

The next move is to get the goods into cases, when they are stenciled with their proper destination, and lined up near the shipping door. Then a clerk takes the shipping instruction, which he compares with the goods, and makes out the invoices. These in turn are checked off by other clerks to verify prices and number of pairs; and also to note that cases are properly marked.

Now the cases are nailed up, the shipping instructions being given to another clerk, who in turn makes out the railroad receipts, and sees that the goods are properly delivered to teamsters.

XX

SELLING THE SHOE.

GEORGE GREGORY.

---

**A** FEATURE in the building of the shoe, which must be classed with the most important, is the salesmanship thereof, as it is obvious that a shoe must be built well, in order to admit of its being sold to the best advantage.

From the viewpoint of the manufacturer, the shoe could not be well built unless profitably sold; so that we infer, if it cannot be well sold, it is not well built. Therefore in this question there is much to consider, admitting selling is one of the most important features in the building of the shoe.

We must review the relationship of selling as it affects the successful building of the shoe, first, from the manufacturing standpoint, then as to the profitable handling of the shoe by the retailer to the consumer or wearer, as it is again obvious that unless the retailer can profitably, which means successfully, dispose of the shoe to the wearer, the shoe could not be successfully built. And so, to be built successfully, it must have features which will make it a quick seller, and possess the selling qualities to make it popular, thus causing a generous demand by its appeal to the wearer as an article of footwear that is correct in style and general appearance.

## SELLING THE SHOE

Having thus become assured of these leading points, yet another feature of successful selling must be considered—from the wearer's point of view, which includes fit, comfort and wear. As it is necessary and inevitable that these conditions make themselves evident to the wearer, with such salient points lacking, no matter how quickly the shoe may be purchased, satisfaction to the consumer or buyer of the shoe could not be secured. Unless the wearer can approve of the service, which means value, the fit, which shows its attractiveness, and the comfort, which is expressed by correctly fitting patterns made over perfectly constructed lasts (according to true measurements conforming as near as possible to a human foot, putting in the wood last, that will permit room for the foot where space should be, and snugness where the foot will allow), the shoe is not built well.

The wearer must be reasonably satisfied and pleased, the dealer must be provided with an acceptable model to catch the fancy of the wearer, and be permitted to merchandise the shoe at a profitable margin; and the manufacturer must be able to construct the shoe in such a manner that dealer and wearer get what they are expecting. In return, the manufacturer must receive a fair value,—yet the manufactured shoe should be produced at a cost which shall not be prohibitive; because, after all, there is almost an agreed price at which a good shoe is expected to be turned out, and if this price seems too high, the demand is correspondingly reduced. Without a strong demand, the shoe does not sell freely, and unless the sale is large, it cannot be considered successful. Thus

## THE BUILDING OF A SHOE

no matter how good the shoe may be in artistic and "correct" construction, it cannot be considered the successful shoe from a salesman's point of view.

So we see how successful salesmanship can be accomplished only by means of the well-built shoe.

The manufacturing, retailing and wearing expectations have been touched upon as regards a shoe, only to prove how dependent the sales end is on each. For, no matter how clever a salesman may be, he cannot continue to be a success if the manufacturer is unable to produce a shoe that gives him the necessary profit that enables the retailer to handle at a salable price, for which the wearer receives such wear as is consistent with the price paid.

There is a saying "Star lines make star salesmen"—but star salesmen cannot dispose of bad lines, which is very true indeed, and particularly as regards shoes. Of necessity, the successful salesman must understand the interests of the manufacturer, the dealer and the consumer; he must work for the success of the three, find a common middle ground as it were, and use all of his ability to serve all, in order to obtain the best results for each. At the same time, he must preserve his own success and standing as a successful salesman.

To do this is no easy matter, as the demands of the shoe trade are at times very exacting. On many occasions, what might be the best interest from the factory standpoint to sell might prove the very worst for a dealer to handle; and if a certain style is sold to a dealer, the real responsibility remains with the salesman. If the latter persuades his customers to buy a style that does

## SELLING THE SHOE

not prove a good seller (though the manufacturer desires such sale), nothing serves quicker to cast doubt upon the salesman and to lessen his influence with the trade, than again to visit his customers and find upon their shelves the styles he had persuaded them to buy on his last trip. It might be possible to plead some reason or excuse for such condition once, but hardly a second time.

Therefore, successful salesmen must keep well posted and be able to guess equal to the best in selling styles to come. And in the present day, styles coming as quickly as they do, salesmen must keep in the closest touch with the factory, in order to learn beyond a guess what is the real style, and just what the real sellers are. Styles are not what this or that individual might personally select, but those which are gaining a steady call in several of the principal cities of the country. If such call proves to be more than a mere flash in several of our large cities, any salesman would have the best of grounds to introduce them to his customers; but he must be sure that he knows what is in demand, and not merely believe that this or that is a good number. The best factor is for him to keep in the closest kind of touch with his manufacturer, and to keep alive to the possible demands of the trade by doing all that he can do, keeping his firm awake to the activities of other manufacturers, as styles spring up quickly, and are just as likely to originate on the Pacific coast as on the Atlantic.

The possibilities of one manufacturer being so situated as to be able to produce to a little better advantage than another some special style, should also be known to the

## THE BUILDING OF A SHOE

real salesman; the wise one will perceive such condition, and will utilize it to the best advantage of his trade.

Sometimes a style arises that some manufacturer cannot produce equal to another, possibly because it would not pay to undertake it. The real salesman, knowing such to be the case, does well to put the proposition by.

Successful salesmanship is never counted by the number of pairs or the amount of sales, but by the profit the sales give his firm, and by the degree of success his customers find in his wares. Both are equal in importance. One cannot succeed alone; and the continued success of both is necessary to his own success as a salesman. The manufacturer must be advised by the sales force; otherwise, he cannot know what the trade really demands. The responsibility, in a very great measure, of the advance of the manufacturer is in the hands of the salesman. If the advice of the latter is cast aside, the factory cannot expect success. If the salesman's advice is not good, the factory does not succeed; therefore, it is a nice point to decide just what to do from a manufacturer's ground.

Nevertheless, it is safe to say that a successful manufacturer, unless devoted to a specialty line, owes his high standing to a judicious following of the advice he receives from his salesman; as the best shoemaker in the world (if there is such a man) would find it hard to succeed making just what he considered good, when the trade demanded something entirely different. Consequently, we must arrive at the conclusion that the good judgment of the selling end, after all, is one of the most important conditions in the building of the shoe.

XVI  
SHOE SAMPLES.  
JOHN H. CROSS.

---

ONE definition of the sample, for the information of readers who are not connected with the shoe trade, is that it is an exact model of the shoe the salesman represents, complete in every detail, and ready for the close criticism of the buyer. Another definition might be that the sample, being a true copy of the shoe made or proposed to be made in the factory, is the thing that sells the goods. It is the best salesman of them all—as any live member of the fraternity will affirm who takes along with him upon his travels a shoe that possesses popular qualifications.

In the shoe trade, the sample is a more thorough and comprehensive article than are the models or the agents' samples of many other manufacturing houses. Unlike a publication, for example—which the subscriber first sees usually in the form of a cover and a few introductory pages—there is the shoe itself, fully made, and offered for the customers' inspection.

The origin of the sample can be traced to several sources; but the strongest indication appears from the traveling salesman who comes in contact with the various calls throughout his territory. By this means, as well as through general information from dry goods and dress



## THE BUILDING OF A SHOE

houses, the manufacturer is enabled to glean ideas which may be crystallized into the finished sample.

In this matter, much depends upon the wide-awake and observant salesman, whose report and suggestions made to the head of the house are likely to result in one of the leading successes of the year. The manufacturer having made a decision, confers with the last and pattern-makers, who, according to the most explicit directions, turn out the last and patterns that are to model the general shape of the shoe, and the various pieces that, when assembled, make the shoe. The dealers in sole and upper leathers are invited to submit from their tanneries such goods that it is believed will fit the requirements of the proposed shoe. The bleacheries and the makers of linings, button manufacturers, and other "findings" people are sought for those very necessary commodities.

In a comparatively short space of time, a tremendous amount of thought and careful planning goes into this sample proposition before it is started in the works. The best heads in the business are counseled with as to the actual utility and value of this or that improvement or original idea, and everything possible is done to ensure, so far as possible, the desired result. With the risk thus made a minimum, the sample goes into the factory, and is closely watched and examined every step of its way through the different rooms. It is strengthened and fortified beyond the experience of any of its predecessors, and the finishing operations are as near perfection as can be. And then it may be presumed that it is ready for its final inspection, when the salesman takes charge of it.

## SHOE SAMPLES

The cost of samples is enormous. It is conservative to say that fifty per cent. in excess of the price levied on a shoe is placed into the sample, both as to material and labor. It must be well made, not only to attract, but to stand the wear and tear of a three months' handling and pulling to which it is invariably subjected.

The sample is manufactured in great variety, from one hundred to three hundred styles in any standard line, in order to cover every anticipated call; but the experience of most lines is that fifteen or twenty will be nearer the number from which the bulk of the business is done. The diversity of styles of toes, together with the various combinations of leather and fabrics, and the necessity of representing button, lace, blucher, Oxford ties, pumps, and many other designs, compel the manufacturer to assume an expense that seemingly is unwarranted by the results obtained.

Nevertheless, the salesman and his samples lead the way for the season's shoe. The traveling salesman has his work "cut out" for him, and future sales assured, in his intelligent setting forth of the qualities of his specialties. One of the surprising things about samples is the totally different styles that prevail in different sections of our own country, and that styles prevalent in the east will not sell in the west or south.

The great tendency is toward a too radical change each season to show something new. When this is done, it is detrimental not only to the manufacturer, but to the retailer, who must clean up the odds and ends of his stock every season at a loss.

## THE BUILDING OF A SHOE

The disposition of samples at the end of the season for which they were made entails a great loss upon the manufacturer and jobber, and the price realized is very seldom over one-half their cost; this runs into thousands of dollars annually for a house of any size. Nevertheless, all manufacturers, "to keep in the game," know that on the samples depends either the success or the failure of the season's business, and therefore all use every effort to put out an attractive line.

This question is necessarily one of the most important in the shoe business, and only by properly outlining this detail can success be attained.

## SHOE ADVERTISING.

HARRY M. FROST.

---

**T**HERE is to-day no field that offers greater opportunities for forceful publicity than that of the shoe industry. Competition is remarkably keen in this business — particularly so among the representative houses, who practically exert a controlling influence in shoe retailing.

Specialization is the commercial tendency of the present era. It gives to the consumer the greatest possible value at the least possible cost. The manufacturer, by devoting his entire energies to the production of one specific grade of shoes, reduces individual cost, increases production, and attains perfection. The unquestioned wisdom of this policy has been truly exemplified in the phenomenally rapid growth of certain lines of specialty shoemaking. The specialty business is now practically in its infancy, and its growth is curbed only by the conservatism of a few of the leading Eastern manufacturers.

It is the manufacturer's first duty to get his goods into the retailer's hands, and quite another problem to move them out again quickly and advantageously. Here is where forceful publicity must be applied, persistently and convincingly, so that it will appeal to consumers and

## THE BUILDING OF A SHOE

attract them to one's goods and away from the product of his competitors. No matter how good the shoes may be, they would likely remain upon the dealer's shelves if the demand were not created among the consumers.

The writer is an ardent advocate of artistic newspaper advertising — brief and breezy and to the point, with its convincing argument of the great merits possessed by the product he is selling, and its superiority over the commodity which his competitor presents. The touch of the artist should be evident in every piece of copy that goes to the publisher's hands. The well-to-do public is the great commercial power to-day. Their good-will and patronage make the fortunes for the merchant lucky enough to win their favor and obtain their confidence, while their disapproval or indifference spells failure. One's advertising must appeal to the shrewd buyers, and mould public opinion for him, and influence the masses to think favorably of his product.

Business prestige grows slowly, and often costs dear, but when one has once secured it, it is worth a ton of mushroom notoriety secured by powerful methods, which grow dim under the strong light of truth. The practical shoe merchant of to-day finds it his duty to become a shoe chemist and to analyze the component parts of all the so-called best makes of shoes, and, if possible, pick the cream of them all. This is no easy task. There is much that is good in the multitude of shoes offered the public to-day, but there are few that can stand the actual test, when it comes to the close examination of the materials which enter into their construction.

## SHOE ADVERTISING

In these days of big profits, unscrupulous manufacturers use every device possible to make their product show an attractive exterior, at the expense of the wearer. Shoes with shoddy heels, soles of cheap tannage, shoddy counters and box toes look attractive after leaving the hands of the masterly shoe finishers, but their term of service as footwear is brief.

The merchant finds his customers composed of those in every walk of life — of every race, creed or color, who have succeeded in getting to the front in their peculiar occupations. They are the individuals who by merit, thrift and energy have succeeded in establishing themselves in life. They are the bone and sinew of the community. They are the real people in any city — the backbone of our great Republic. To Barnum is attributed the appropriate saying:— “You can fool some of the people all of the time, and all of the people some of the time — but you can’t fool all the people all the time.”

Public sentiment is not long in pervading a community, and it is the merchant’s first duty to assure himself that he is creating a sentiment among his patrons that is favorable to him and his business interests.

While it would be folly to formulate a set of fixed rules for shoe advertising, there are indeed certain underlying principles that should be borne in mind. The first work of publicity on a factory output is to establish a name for one’s product — a name that one can make a household word — that he can stamp upon his shoe to indentify it as the perfected product of his greatest skill, his hallmark of excellence. On it one stakes his reputation, and con-

## THE BUILDING OF A SHOE

sequently must maintain his standard of quality at all costs.

Next, the shoes must be catalogued. Here the styles must be illustrated faithfully and described minutely. The whole character of the publication must impart an air of prosperity. This brings into play a knowledge of the printer's art—as mediocre work is too often indicative of the character of the goods produced by the manufacturer, and a poorly printed catalogue will often prejudice the buyer against shoes. There are those who would not be influenced by poor printing, but the people of taste (to whom the majority of shoe manufacturers cater) are sure to be prejudiced to a degree.

A word concerning the care that is used in the preparation of illustrations. Poster advertising is somewhat discredited to-day, but it has a known value. If properly displayed with an attractive illustration, posters are bound to help the sale of shoes. Street car cards, fence signs, etc., all play their allotted part in the great cycle of publicity; but the booklet and the folder—personally addressed and distributed through the mail to the homes of the consumers—make a direct appeal for patronage.

After one has gained the public confidence through the press, catalogue, and posters, car cards, fence signs, booklets, etc., truly artistic windows must be produced that will draw the people into the store to see the goods. Here the same convincing touch of the artistic finds its full influence. Originality in producing novel effects in window displays brings into test the advertiser's ingenuity in devising window cards, display signs, price

## SHOE ADVERTISING

tickets, etc. Ability in this line is also greatly aided by electricity, which affords a broad field for the cultivation of one's talents in window dressing. If some design can be devised that will halt the attention of the passing multitude and impress upon them the name of one's product, or some superior feature which identifies the shoe, one has made an impression that will bring customers to the store.

It then devolves upon the salesman to study his customer and give satisfaction in fitting, and he has secured a customer that becomes a valuable asset to his business. The salesman should aim to recommend to his customers the best shoes obtainable for the price — not those showing the greatest margin of profit, regardless of the service they will give.

Many elements enter into the popularity and salability of a shoe. The manufacturer must take special care in creating styles that will harmonize in every way with the changes in fashions. The designs must represent the most authoritative interpretations of what is considered really smart by the leading American and European shoe designers. Whether it is a walking shoe or a dress boot, the style should in every way be made to create a harmonious effect with the prevailing fashions. Publicity is an essential feature of the successful shoe business, and the scope of its influence is growing to be more thoroughly understood.

The world is moving ever onward, and in order to become an integral factor in its existence, we must be on the alert to grasp all that is novel and original, and always keep just a little ahead of the procession.



## XVIII

### SHOE TRADE JOURNALS.

EDWIN W. INGALLS.

---

THE interests of no industry known to the writer are better looked after, in the way of trade publications, than are those of the boot and shoe business.

Technically, commercially and industrially there are journals which expend thousands of dollars annually — some as high as \$100,000 each year — to make a publication to present to their readers. The worth of a trade journal is largely measured by the quality of information served to its clients, and the paper that is not informing no longer has a standing with the discriminating reader and advertiser.

Trade journals that amount to anything are (first) made for the subscriber and (secondly) for the advertiser. The successful shoe trade journal is such, just as much because its advertising pages are informing as its literary standard high. The advertising pages of the technical and retailing journals give a wonderful store of information to manufacturer and dealer.

Trained men in shoemaking processes fill the technical shoe journals with valuable matter, and the retail shoe dealers are told by men of great knowledge, training and judgment of "the shoes to buy in their season, and how to sell them." For the most part, trained men only speak

## SHOE TRADE JOURNALS

in the several departments of the great industry which, in its manufactured product, is now (1912) credited with an annual business in the United States of \$500,000,000.

There are men in the shoe trade who liberally support their splendid trade journals. There is also a large element not in the least loyal to these great engines for the good of the shoe trade. The trade journal is forever discussing questions "for the good of the trade," without the least iota of support from prominent factors in the industry. They know only of the existence of the trade journal when their financial nerve centres are attacked through the tariff laws or other legislation.

The shoe trade market journals, and papers of record, are exceedingly high class, and the technical papers are probably not excelled in any industry. There is much dignity and character in the editorial columns of the long established journals, and they have a very valuable and substantial constituency. There are also "directories of the trade" that call for much skill and knowledge in their preparation. Technical books in the shoe trade have not been practical, as they become obsolete so quickly, shoemaking methods changing so rapidly.

Naturally, the retailing field is the most extensive catered to in trade journalism. In this direction the information is very thorough and carefully prepared, and the publications make themselves decided factors. They aid retailers with their organizations, local, state and national, and give much space to their deliberations — also aid very materially in the solving of vexed problems affecting shoe dealers in various sections of the country.

## THE BUILDING OF A SHOE

They give much help to the great force of salesmen going out twice each year, on trips varying from two to five months with the following season's goods. The trade journals' advance information regarding styles tends to give harmony and concerted action to the shoe style situation, important to shoe dealers, because they have to largely order in the spring goods they sell for fall and winter, and in the autumn months they are obliged to place orders for spring and summer shoes. It is in the promulgation of tendencies in styles that the retailers' trade journals do much of their important work.

Shoe trade journalism has been a marked factor in the business for more than fifty years. Papers of record and market reports first gave impetus to the trade papers. The daily paper, with so many fields of information to cover, has never usurped the trade paper constituency. In fact, no one shoe trade publication can successfully cater to all elements in the business, as there are so many ramifications on the technical, commercial and manufacturing sides of the trade. The more successful journals closely specialize in some one department of the shoe trade, developing expert information coming from the best minds in the trade. Many times the best contributors to the shoe trade press are the practical minded, well-informed workers in the various departments of the business. For instance, probably the most helpful writers on the retailing end of the business are the bright, keen-witted men who have been employed in retail stores. They know from actual experience what are the best plans for the retail shoe merchant to pursue in advertising and

## SHOE TRADE JOURNALS

otherwise conducting his business, the effort always being to give to the dealer practical and helpful information.

Specialized information in all trades is becoming more important as time goes on, and yet it has been impossible up to this time (1912) to promulgate reliable statistics (except those made by government census each ten years, and they in a way are decidedly incomplete and unsatisfactory) regarding the shoe factory output. Trade journals have been unable up to this time to secure this information from the 1,300 or more shoe manufacturers. This demonstrates, in a way, the individual character of the shoe business. Scarcely any two shoe manufacturers do business alike on the commercial and manufacturing sides, there probably not being another great industry wherein methods of producers are so radically different — and yet manufacturers are apparently successful when pursuing diametrically opposite ways in bringing what is practically a similarly made shoe to the consumer. Probably the reason why we cannot secure desirable shoe-making statistics each year is owing to the “individual” character of the business, which to-day is further away from a trust basis than any other important industry in the United States. Other industries give one a very good and reliable idea each year regarding production. Not so with the shoe industry, and that fact has done much to injure the shoe trade at Washington, when the politicians have wanted information regarding free hides and tariff and other agitation affecting the shoe industry. The trade journals have endeavored to remedy this situation, but shoe manufacturers have steadily refused to disclose

## THE BUILDING OF A SHOE

their business to the public. The government ten-year census is the only shoe trade output information bureau.

A subscription price is placed upon all trade papers which have the second-class mail privilege; others are styled "house organs" which are distributed free by concerns which publish little except their own advertising. The first-class journal must have a bona fide subscription list. It is true that any first-class publisher will send out sample copies at certain periods, but that is quite different from sending year in and year out a large number of papers without cost to members of a trade. This is done under pretense of "making good" to the advertiser, and because the journal feels the necessity of being in the office or store where a competing journal is, even if placed there free. A thoughtful man must admit that such papers are not read, or only partially so.

The value of a high class journal cannot be fairly judged by its size, bulk, number of pages of advertisements, number of illustrations, nor in fact by any other one factor but quality. Quality, alone, from cover to cover, should be the guide of the reader and advertiser (of course assuming for the latter that the field sought is adequately covered). The trade journal formerly contained a large amount of irrelevant padding, trade write-ups, which were in no sense news, and similar verbiage, merely as a balance for advertising. Strange to say, this is to-day largely the policy of some papers, which, judged by bulk and colors, are considered to be in the front rank.

The journal which it is sought to have thoroughly read must contain the proper sort of reading matter. A busy

## SHOE TRADE JOURNALS

man wishes it so arranged that he can use it quickly, file away the articles or departments which he wishes to refer to later, and know what is going on in the trade without having to hunt news out from pages of puffs. Right here the writer wishes to say a word about this phase of trade paper publishing.

The reading notice commonly called a "puff" should long ago have been understood and tabooed. It is a meaningless pat on the back, which many advertising merchants think is delightful, that is, about themselves, but do they take equal pleasure in reading the puffs of competitors? Do not confuse the puff with legitimate news matter, for the two are entirely different. Many advertisers still insist upon these free notices, and frequently ignore the best, most up-to-date paper, because some other journal will give the advertiser all of the puffs and reading notices he wishes. Now see the folly of such a decision. The paper is published primarily for the reader. Is he interested in a paper of puffs, which are the same, week after week, or varying a little? Certainly not.

Competition is such to-day for advertising, and so many schemes have been floated that were fruitless in substantial results, that the advertiser often looks with suspicion on the legitimate proposition. The trade paper, however, which has earned a reputation as a high class magazine, and which has thousands of subscribers who take it year after year, is not a fake nor an experiment; it deserves the confidence of those merchants who seek to reach customers, old or prospective, by publicity. Many

## THE BUILDING OF A SHOE

manufacturers have lost confidence because they failed to secure returns. They failed, owing to wrong methods, poor mediums, or poor goods, or a combination of all, and have consequently concluded that there is no virtue in advertising. Some have tried to start in on too large a scale, expecting immediate results.

Let us assume that the manufacturer wishes to advertise to the retailer. He may think it advisable to use every journal going to the retail trade, but suppose his appropriation is limited, and he can use but a few mediums, or only one. Should he not take the journals one by one and judge of their quality, their actual value, imagining himself to be the retailer, and then judge which is the best paper, the most interesting and instructive and useful? He should, in short, select the trade paper which from cover to cover would be most thoroughly read and will accordingly reach more thoughtful dealers. It is very poor policy to be influenced by low rates, the greatest number of pages or promises of puffs. Those are inducements which the advertiser should at once be suspicious of, remembering that the rate is what the publisher considers the space worth, that the puff is intensely uninteresting to all readers excepting the individual so puffed, and that superfluous pages do not signify real trade paper worth.

The medium, therefore, with the best class of readers, will usually contain the highest quality of reading matter, and carefully prepared advertising as well. Trade paper subscribers study advertisements, the same as the layman is interested in the advertising pages of his literary

## SHOE TRADE JOURNALS

magazine. The high class journal employs expert advertising writers and illustrators, and goes to heavy expense to issue publications which not only merit attention but will absolutely win it by their superiority in all departments.

There are excellent trade journals in every important industry, and those of the United States, for quality, progressiveness and generally up-to-date methods surpass those of any other nation. The captains of industry may rest assured that their respective trade mediums have kept apace with the country's rapid commercial development. The trade paper cannot reach its highest state of efficiency, however, without loyal support.

Born in a new country without an advance agent, the American shoe, despite its very ordinary inception, was not to be likened to the old proverb, wherein it is said that "Good wine needeth no bush."

■ The American shoe got itself talked about—and people came to know it better than if it had waited on some neighboring hill-top to be discovered. And the American shoe therefore owes no small part of its success to those shoe trade journals which have helped in so many ways to push it ahead.

The shoe trade publications have talked confidently and enthusiastically of America's great products in footwear, because they have had faith. And faith is one of the greatest things among our possible possessions.

•



## XIX

### MERCHANDISING THE SHOE.

GEORGE C. ANDERSON.

---

**T**O merchandise the shoe is nothing more nor less than to devise the most profitable ways and means for its outlet from the factory; when we begin to merchandise the factory's product, we fix upon various systems for placing it upon the market.

Here is a most interesting and illuminating viewpoint from which to observe the progress of the shoe as it goes into the hands of the buyer and seller, and so, in manifold ways, becomes introduced to the public. Through the present up-to-date system in vogue, the manufacturer is enabled to dispose of his goods by means of various channels, each a large industry in itself, which may be pointed out as follows:

The wholesaler, or "jobber" of the shoe, has established himself in all the large centres of the country, such as those of New York, Boston, Philadelphia, Baltimore, Chicago, Pittsburg, Kansas City, St. Louis, and cities of equal importance in the West and South, where he caters to the retailer exclusively. To begin with, the jobber selects his merchandise in the following way: The manufacturer's agent or salesman is started out from the factory with a line of samples that ranges from fifty to two hundred and fifty in number — according to the variety of styles, methods of construction and grades produced, — designed

## MERCHANDISING THE SHOE

by style experts at the factories, made over an assortment of popular style lasts, and carrying out the very newest ideas in models and patterns.

These salesmen leave early in May with samples, showing styles for the spring demand a year in advance—and in November for the next year's fall and winter trade. The sample line is shown to the jobber's representative, who purchases on such styles as may interest him. In his turn, the latter sends his salesmen with these samples to the retailer, from whom orders are secured. The jobber, having defined his lines, places large orders with the manufacturer, practically covering the season's requirements. Thus it is seen how the manufacturer places the product of his establishment with the jobber, who then sells to the retailer, who in turn serves the consumer or wearer.

Again, some factories have established their own jobbing houses as distributors, thus creating an assured outlet, the methods of buying and distribution being the same.

Another popular channel of merchandising the shoe is the operation of a chain or a series of retail stores. These, varying from one or two up to one hundred and ten throughout the United States and Europe, and carried on wholly by manufacturing concerns, serve as outlets for their entire product.

Also, there are large retailers and department stores which are important factors in the distribution of footwear. Certain of these stores have a very heavy purchasing power, and they buy in quantities equal to many of the moderate jobbers.

## THE BUILDING OF A SHOE

And yet further, the retailer who prefers to buy direct from the manufacturer is approached by the regular factory retail salesman, who leaves for his trip during the latter part of February for fall business and the latter part of August for the spring business. He carries a very complete line of samples, showing the latest models that have been turned out by the designer. This salesman will consume from twelve to twenty weeks in covering his territory, calling upon the retail trade. The samples are spread or displayed at some commercial hotel, or at the retailer's store. There, the retailer's attention is directed to the attractiveness of the line and the merits and durability of the merchandise, and every effort is made to secure the favorable decision. The orders taken are mostly for future shipment; and they are for shoes to be made for the retailer, following out and incorporating certain of his ideas as to style, finish and detail — which tend to give individuality to that retailer's merchandise when set forth to the consumer.

More advertising than ever heretofore is being carried on by the manufacturers in their efforts to interest new trade; while the jobber who liberally advertises in trade journals gives unusual attention to the distribution of very handsomely illustrated catalogues showing hundreds of styles in their several different colors. Some of these catalogues are completed at a great expense, costing as high as \$1.50 per copy — but they are mailed free of charge to the interested retailer.

Some manufacturers produce shoes for wholesalers only, some for retailers exclusively; while others manu-

## MERCHANDISING THE SHOE

facture lines of shoes that are branded or named and extensively advertised to the consumer; many of these factories maintain a series of retail stores, although certain branded or named lines can only be obtained through a wholesaler.

The factory organized to dispose of its product to both wholesaler and retailer has provided for a steady volume of business throughout the entire year, practically obviating the possible condition of decreased production during the "between seasons" period, which occurs usually in June and December.

The success of any factory depends greatly upon the ability of its sales organization to keep the establishment running to "full capacity" daily; this, of course, holds down the "fixed manufacturing expense," and its business is most satisfactory with such conditions prevailing, so that the manufacturer is assisted in his effort to produce better values. If a factory is equipped to make 5,000 pairs of shoes daily, the 5,000 pairs must go to the cutting department each day.

The increased tendency on the part of the retailer to deal direct with the manufacturer is very noticeable, and has caused several manufacturers, to respond by maintaining an "In Stock" department at the factories, or a separate section, at least, where the retailer can "size in," that is, order special sizes of shoes to fill in his stock quickly.

A noteworthy feature is the promptness with which the shoes must be delivered to the distributor — this being made necessary by the frequent change of styles.

## THE BUILDING OF A SHOE

The factories of to-day, in comparison with those of even five years ago, show such a great increase in producing capacity that the sales departments have to be fully organized to take care of the great volume of shoes turned out, as well as to keep these large factory equipments supplied with the required amount of orders. A factory producing 5,000 to 6,000 pairs of shoes daily is considered a good-sized plant; but there are factories making wider varieties of footwear that produce 40,000 to 45,000 pairs daily; and the sales force and organization handling of the smaller production must be just as complete in itself as those of the larger plant.

XX  
EXPORTING THE SHOE.

M. E. H.

---

**T**HE fame of the American shoe is one of the dominant proofs of its excellent construction. Manufactories that are equipped with the best appliances in the world, and workmen skilled in their operation have produced shoes that to-day stand every test, and for which there is a constant demand from many foreign countries.

A continued call for the American-made shoe from abroad signifies an added success and triumph to those already attained here at home. This has been brought to pass only within the past twenty years, for, previous to the year 1890, very few shoes were exported from the United States to foreign countries, with the exception, possibly, of those shipped to Canada. But during the following ten years, an extensive business was gradually built up, the goods being exported mostly to Great Britain and Germany.

Some of the earlier shipments were not up to sample, which for a time resulted in making it very hard for America to increase her exports to these countries. For several years the Germans especially were very suspicious of American shoes, and it was extremely difficult, even for those having first-class goods, to find a market for

## THE BUILDING OF A SHOE

them either in Great Britain or Germany. When dealers in both places, however, found certain manufacturers were shipping goods to them which were fully up to sample, and vastly superior in style to their home-made goods, it was not long before a large export business was being done by several firms with Great Britain and throughout Germany.

This business has gradually extended, until American goods are now found freely distributed throughout France, Austria, Switzerland, Italy, Egypt, South Africa, and even a few finding entrance into other countries.

The large increase in this business within the last fifteen years can be ascribed largely to two causes. First, the greatly superior styles over the goods made in these countries, and, secondly, that in some places, at any rate, it had been customary up to the time of the introduction of American shoes in considerable volume, to make no half sizes. The American plan of making all shoes in half sizes, as well as full sizes, resulted in a much better fitting shoe, worn with greater comfort, and preserving the shape better when worn.

During the past few years, the American shoe has made tremendous strides; its popularity abroad has been steadily on the increase, and as a consequence, exportations have exceeded most estimates.

A few makes of shoes have been found by foreign nations so reliable and satisfactory that some manufacturers making these desirable and popular shoes are having inquiries from nearly all parts of the world. This shows the great advantage obtained for a manufactured

## EXPORTING THE SHOE

article when it is found to be of reliable quality and desirable in other respects.

The shoe export business to-day is principally with Great Britain, Germany and France, although a considerable trade is being done in Austria, Switzerland and Italy; also with Norway and Sweden.

Many of the lower priced shoes have been introduced into foreign countries by salesmen from the United States locating at some central point, and thence reaching out to other cities and countries within traveling distance. The largest and most successful export business, however, has been done by the opening of special stores for the sale of the product of some one manufacturer, this being confined, however, to shoes of high grade.

Foreign nations are to-day copying American styles and American methods, and if foreign workmen could be found who would produce as much within a given time as American workmen, the future prospects of our export business would be somewhat doubtful. This, however, may never happen, as it is impossible to-day to find workmen in foreign countries who will produce the same results in a given time as are produced in this country. The chances are, therefore, that the business of exporting shoes to foreign countries will continue for a good many years to come.



## XXI

### THE RETAILER.

JOSEPH COGSWELL PALMER.

---

ONE of the most active participants in the building of the shoe is the man who retails the shoe to the individual customer—for does he not share prominently in securing permanency for two of its strongest pillars, its reputation and its popularity? The retailer is an important man in the trade. The public, those who know shoes, and those who do not know shoes, approach his doors in good faith, and read the sign overhead and the display cards in the windows, believing in his guild and its mottoes. If he sells the public a straight line of goods, he is honored in any community.

The store of the retailer is always one of the most attractive on the street; invariably so, as the shoe dealer has always been in the front rank with other progressive tradesmen in this respect. His selection of stock is significant. If popular and what the people want, that is sufficient to insure his being master of his trade. The allurements he places in his window is the same that he has on any shelf inside; one can depend upon him by a trial of his window advertisement.

The retailer worth knowing has a shop that is neat and handy and tasty, and with an air of refinement and good arrangement about it that pleases the rich and the poor,

## THE RETAILER

alike. He does not need many original axioms for his clerks; they take their cue from his experienced orderliness and suavity, and shortly his system of work becomes theirs, and they follow his methods to the letter. He and his clerical force are as a unit in a successful endeavor to please the public.

Now every shoe dealer has his own way of making the shoe interesting to his customer. But the following, though it may not be taught in any of the industrial colleges, is in use in many establishments known to the writer, and it suffices to say that the system pays.

The customer is given a cheerful greeting, and is at once invited to be seated. Without obtrusiveness, as much information as possible is obtained as to what is wanted, if the customer particularizes. Thereupon, the retailer goes to his stock, and gets what shoes appear to apply (at the same time avoiding bringing forward too many, as that has been known to create confusion). The goods are then demonstrated with the ease of the practised salesman, and their good points are set forth. A shoe is then selected that it is believed will be the best fitter, and it is placed on the foot as expeditiously and as easily as may be.

If it is found that the shoe does not fit or does not suit, the salesman continues with patience and serenity to try on until the customer is fitted and pleased. If, from any cause, the sale is lost, there is not the least sign of a loss of temper, whatever the manner of the customer. Undisturbed and equable, the retailer invites the apparently dissatisfied to try again at some future time.

## THE BUILDING OF A SHOE

As to the fitting of the shoe, the exact salesman is aware of the dominant value of length — he makes sure that the fit is long enough, knowing that nothing is so sure to cause dissatisfaction as a *short* shoe. He makes sure that the ball of the foot rests in the ball of the shoe. This is the correct thing to do, except in the extreme cases of long or short toes — then the salesman has to make use of his own best judgment in the matter. He is always wise enough to ask his customer to take a few steps when the shoes are on, and then to interrogate him as to whether they are all right or not, before the sale is closed. This saves trouble in some cases.

One should not say too much about the wearing quality of shoes, as that is a proposition that cannot be truly demonstrated. One person can wear a pair of shoes steadily for a year; another may wear a similar pair six months; yet another person may be unable to get three months' wear from the shoes. There is not anything worn that is subjected to so much use, as well as to so much misuse and actual abuse, as shoes.

It is getting to be obsolete now to expect rebates or allowances for the poor wear of shoes. There are numberless unjust returns of goods, which have to be treated with as much diplomacy as possible. No rules can be written for such cases. It has been frequently stated, and with growing conviction of the justness of the statement, that the time will come when the customers must assume the full responsibility of the shoes they purchase, as well as of their hats and other articles of wearing apparel.

## THE RETAILER

The retailer soon learns how to acquire and maintain the confidence of his customer. This is done simply by being careful of what he says and does, and by showing that he means both what he says and does. To illustrate: A customer insists upon having size 6D. The salesman, knowing she should have a longer, narrower shoe, has no hesitancy in describing the difference. The sensible customer appreciates this interest shown, and is thereafter one of the best buyers at that establishment. The writer has proven this many times. The truth stings a little, but the end justifies the means.

The "blind size" system, so-called, is of no use to the salesman who is willing to tell the size if asked. There are many "blind size" systems, too, and unless one has the key to them all, they remain a mystery. But high grade shoes are usually marked in "plain English."

## XXII

### THE WEARER.

GEORGE H. LEVIRS

---

**H**AS the wearer of the shoe ever considered himself as one of the actual builders of the shoe? To be sure, one readily says, the greater the number who wear the shoes, the more the latter will be made. But in these days of striving after the best things, there is a deeper seriousness in the question than will be satisfied with such an answer.

The trend of the age requires that the true builder be constantly on the alert for improvement. As this is demonstrated in the case of the reputable shoe manufacturer, the practical builder of the shoe, so is it true of the public who wears the shoe, and thus, more than any other agency, builds up its good repute. In other words, the more persistent the wearer becomes in behalf of the quality of the material and the make of the shoe, the better shoes will be made — and so in this way, the wearer has an important part to play in the construction of the shoe.

From the standpoint of the manufacturer, the wearer of the shoe is his patron, of course. The former goes to no end of pains to please the multitude who come to him for one of the most important features of wearing apparel. The establishment in which he builds the shoe is equipped with every up-to-date appliance for the construction of

## THE WEARER

footwear; there is to be found every modern agency for securing progress and perfection to a great enterprise and industry. The wants of the public have been and are still being analyzed and given heed to, and as often as required some new machine or invention is added that helps to make a finer and better shoe or that gives speed to some part of the process of manufacture. Through his salesmen and other channels, the manufacturer is always seeking to know the popular need; and through his factory he produces as nearly as possible what the public calls for.

The education of the public is by no means neglected in the matter of the manufacture of its footwear; and it is conceded that the demands of the wearer for shoes of excellence are the dynamics that keep most factories at work in the effort to supply such demands. The public is well aware of the fact that it is the apparel that has so much to do with making the man; and as much attention is given to the fit, appearance and wearing qualities of the shoe as the overcoat, in order that good taste may prevail. And, as most men and women know what they want in the shoe line, the manufacturer undertakes to make himself equal to the occasion.

The great test of the manufacturer's effort is made by the wearer. The reputation of the shoe is with the decree of the latter, and the success of any brand of footwear is so won or lost.

He who wears the shoe can best tell whether or no it lends ease, or comfort, or grace, or elegance to the human foot — and so may he praise or condemn. What he

## THE BUILDING OF A SHOE

says as to the protection afforded by the shoe through all seasons and in all weather is the last word in the matter. He is readiest to note if the shoe seems a disproportional part of the apparel, or if it has been so made that its unobtrusiveness is an assurance of its uniformity with the rest of the clothing. The wearer is sensitive to the deviations from the principles of comfort and good wearing qualities, and he is heard from if such deviations take place.

The one who wears the shoe goes on from year to year influencing the building of the shoe by his suggestion, and the manufacturer of reliable footwear is, in the estimation of the wearer, the only ideal master workman.

Some people will wear but one make or kind of shoe; most wearers have tried all styles and makes. It is the demands of the latter that cause the great and increasing diversity in the manufacture of footwear. Shoes for all times and seasons, occasions and events are what the public finds itself liberally supplied with to-day; and each kind of boot, shoe, rubber or slipper is the product of a great specialty concern that furnishes its works with skilled workmen and the best appliances of the age for such production. The manufacturer, year in and year out, caters to the demands of the wearer, and if the criticism of the latter is satisfactory, the goods are sold.

## XXIII

### WOMEN'S FINE SHOES.

CHARLES E. WILSON.

---

**I**T is only within a comparatively few years that the women of this country have given much regard to their shoes. The average woman has been content with a pair of walking boots, and one or two pairs of ties and slippers for the house, but in this present age of ease and elegance, women are obliged, owing to the great variety of gowns worn, to pay particular attention to their shoes. It is now a recognized fact that well-chosen footwear is as necessary as are well-chosen hats and gloves.

The proposition that presents itself to the manufacturer of fine shoes for street and house wear is to find new ideas, or to adapt old ideas to meet the requirements of the present fashions. Possibly it would be well to go still farther, and to say that he must determine this winter the prevailing styles and colors for next winter, and lay his plans accordingly. The most difficult task is the creation of a new and at the same time a practical design. It is a comparatively simple matter to produce a new shoe, but the difficult part of the problem is to produce a shoe which will satisfy the demands of fashion, and yet look well on the majority of feet.

For example, let us say that, as is the case at the present time, the foot must have the appearance of being very



## THE BUILDING OF A SHOE

short. The designer, therefore, may well go for his ideas back to the old court days of the Latin races. The Spanish and Italian feet were short, and the designers of the thirteenth and fourteenth centuries were as skilful as those of to-day. From those old shoemakers who journeyed from city to city, making their home with this prince or that duke (while they designed and made shoes for the household), we get the short-looking slippers, made from colored leathers, silks and satins, adorned with buckles and beads, and perched on high heels. The walking boots with colored tops, so much in vogue at the present time, were evolved in a similar manner.

The influence of the Latin races in styles of dress, etc., begins to show very prominently among the Saxons during the reign of Louis XII, and from that time onwards we find the same types of footwear in France, and later in England, as were earlier seen in Florence and Milan. The longer and narrower feet of the Saxons, however, made it proper to modify these fashions to some extent, and these later styles reached their perfection in the reigns of Louis XV and XVI. From them we get our ideas for the long, narrow effects with broad, high tongues, buckles high on the foot to accentuate the length, and larger heels. These larger heels were in all probability made necessary because of the greater average height and weight of the wearer.

Ornamentation plays a very important part in the fancy shoe of to-day. Many elaborate designs in beading are made by concerns who specialize in this work, the process being a reminder of the days of the old-time shoemaker.

## WOMEN'S FINE SHOES

Fifty years ago the materials were taken from the manufacturer, or "boss," as he was then called, to little shops in the country, where two or three men divided the expense of heat and light, for they worked early and late in those days, sewing and hammering these materials into shape for "milady's" shoes. In like fashion, the beader of to-day gives out his work to women, who, during their spare hours, sew the beads by hand onto the material, according to designs stamped thereon by the beader.

The manufacturer of fine shoes oftentimes designs his own beading patterns, the better to carry out the idea of some particular shoe that he has in mind. The same may be remarked in the case of buckles. One shape may be suitable for street wear, another for the ball-room. In order that the finished product may appeal to the feminine taste, the shoe manufacturer confers with a buckle manufacturer whom he finds ready to assist him, and together they design a buckle that helps make the shoe appear high or low, short or long, as the case may be.

Quite as much attention must be paid to the making of a street shoe or walking boot, as the fancy slipper. The types of walking costumes must be taken into consideration, and so boots with cloth tops are now in vogue, many of them made of the dress material with buttons that harmonize. For afternoon wear, a compromise between the street and house shoe is often effected, not as plain as the former, nor as elaborate as the latter.

As yet, the Latin women, even among the poorer classes, take more pride in their footwear than do their Northern sisters. Not an inapt comparison might be made between

## THE BUILDING OF A SHOE

the dainty "zapatos" of a Mexican half-breed in a western mining camp, and the shoes of a girl from the North. Even the Indian girl takes pride in her moccasins, and the beading done by the Navajos is much sought after for the beautiful designs. Many of these patterns have symbolical meanings, for the Indian maiden oftentimes weaves into her moccasins her family history, or some intimation of a new-born love affair.

An appropriate name has much to do with the success of a shoe, and it is a matter of history that good ideas in footwear have gone wrong for the want of a better name; but, with a name or without, a shoe will succeed if it be original in design, pleasing to the eye, and adapted to the prevailing fashion.

## XXIV

### SHOES FOR MEN.

W. H. BAYNARD.

---

**M**EN'S shoes, as to their material and style, have necessarily differed from shoes of every other make from the beginning of shoe production. A heavier leather and a larger size are the two principal distinctions of men's shoes from those of women, while the method of their manufacture is such as to ensure the greater strength and longevity of footwear that is made largely for out-of-door use or for the rougher employments of life.

Durability, solidity and comfort have always been the leading qualities aimed for in the production of men's foot-covering, and there has been no era in the process of this manufacture in which these traits have not been particularized. Let the men's shoe be made ever so nicely and fastidiously, it is always the men's shoe.

Men's shoes do not vary in style so much as women's shoes because the innumerable combinations of dress for women are not possible for men; consequently the number of styles of shoes that are made for men is only a fractional part of those that are made for women. In an experience of forty years one

## THE BUILDING OF A SHOE

sees many styles of men's shoes come and go and repeat several times during that period, and it is admitted that on the high toe shoes, that have been so much in vogue for men the past few years, it never happened before to the writer's knowledge. The variety of high toe shoes has been quite numerous, and it is believed that a certain percentage of these shoes will be in use for many years on account of the fulness over the large toe, principally, which has proven very satisfactory to a great many wearers. To-day a great many varieties of low, receding toes are being shown, and somewhat of a narrower effect in a better grade of shoes, but it is evident that it will be sometime before the low receding toe will be made in quantities in the medium and cheaper grades. This receding toe appeals very strongly to a large class of shoe wearers, and is being bought very freely as it is so decidedly different from the high toe that has been so much in vogue—for men who have a desire for distinctive dress and have taken it up immediately. The extreme high toes are being modified.

Pumps are worn this (1912) season in as large quantities as ever, as they can be worn on the street, in the house, and for dancing as usual. The manufacture of pumps has so greatly improved the last few years that there is no difficulty in keeping them on the feet. One-eyelet, two-eyelet and three-eyelet ties for men have apparently had their day, although one sees a few styles shown, the blucher oxford and the plain lace oxford being in vogue for summer.

## SHOES FOR MEN

There is a strong call for a low broad heel and wide shank oxford for men, which demand is being well met by the progressive shoe manufacturers.

There is such a variety of styles in men's shoes running from the narrow toe to the broad freak toe that about any toe that a man would decide was the best for him is in style, so it is a case of pay your money and take your choice.

Regarding the differences in the manufacture of men's shoes and those for women, the operations are practically the same, the difference being, of course, in the lasts, patterns and material. The same machinery is used and in a great many factories there are men's and women's shoes made by the same workmen. The idea that women's shoes and men's shoes cannot be made in the same factory without one taking on the characteristics of the other has been completely exploded, as there are many factories now that are making men's and women's shoes by the same workmen and producing shoes that look their part. The great improvement in shoe machinery and the more artistic skill of the workmen are accountable for this condition.

The city of Brockton, Massachusetts, is the largest centre for the manufacture of men's shoes in the world, and the output of the factories has attained such perfection in style, fit, workmanship and durability that the Brockton shoe has been copied the world over; but the shoe dealers everywhere are

## THE BUILDING OF A SHOE

waking up to the fact that there is only one Brockton shoe, and that is shoes made in Brockton.

In the leather for soles and uppers for staple articles, the variety is about the same in the men's and women's, the difference being only in the weight, but in the fancy leathers more are used for women's shoes than for men's.

There are a great many salesmen that carry both men's and women's, but the major portion carry only their particular line.

The sale for American-made shoes abroad is increasing rapidly, and the styles are copied extensively by the European manufacturers, they having American lasts and leathers.

## XXV

### BABIES' SHOES.

BYRON W. WOODBURY.

---

IT has somewhat the appearance of the A B C of shoe construction, as one approaches the subject of the manufacture of infants' shoes. In reality, though much of this construction is suggestive of the simplest steps in the art of shoemaking, its importance is on a par with the best class of specialties for adults' footwear. In fact, many types of the leather footwear made for little children are quite equal in their method of manufacture, and in attractiveness, and even in beauty of appearance, to the handsomest types of shoes nowadays made for men and women.

Babies' shoes, because of their diminutive size and extra fine finish, are sometimes looked upon as a novelty. The novelty lies in the exquisite workmanship that has set its mark upon them; but as a class of shoes, they are a highly specialized necessity rather than a novelty, as the baby's shoe, itself, is a simple fact, and is no longer to be considered as something new.

Years ago, it appeared that the tiny sock was sufficient for babies' wear throughout babyhood and for some time afterward; then came a homely and roughly fashioned foot-covering of cloth and later of kid, which, after a



## THE BUILDING OF A SHOE

little wear, left hollows at each corner of its square toes, and never conformed to the shape of the foot. And it is only within a very short space of time that the present-day variety of shoes for babies has been evolved from these crude examples until it seems almost impossible to admit of further improvement.

The Red Man has shown us much about footwear that we are just beginning to appreciate. It was the Indian moccasin, simply made, easily adjusted, and prettily beaded, if you will, that gave us the idea of the moccasin for the baby. That is the most suitable foot-covering with which the baby now starts out in life, and, so far as absolute comfort goes, is doubtless appreciated by the little wearer. It is made of alum and calf leathers, or a fine, soft kid skin.

After the baby is through with that, and when it gets a bit older, it comes into possession of its first real shoe,—baby's calf sole;—the finest kind of adult shoe in miniature, with a sheepskin sole. This tiny shoe is constructed like a turn shoe and is featured by a variety of uppers. They are made both button and lace; some with artistic effects, as well as handsome embroideries.

Aside from the foregoing styles and quite as necessary for that lively period when the baby is creeping about and beginning to feel for its footing — is a strongly built shoe, so constructed as to successfully withstand the rough usage to which it is put. Then those who know the baby's needs are soon ready with the "first step" shoe, or the "between" shoe, as it is sometimes called. Its construction is on the turn process, with a special flexible split

## BABIES' SHOES

leather sole with a velvet finish. The uppers are composed of kid skins, calf or patent leathers. Latter-day improvement has made the inside of the shoe perfectly smooth; it is thoroughly lined with the flexible leather that withstands a great deal of rough usage. Roomy toe effects are a leading feature.

As the baby takes on years, it gets up into its own Goodyear welt, having arrived at size number seven. Babies' shoes are made in sizes 0 to 4, the "first step" or "between shoes 1 to 5, turns and cack turns 1 to 6 and 5 to 8.

The styles of babies' shoes now on the market are almost numberless, and have thus become one of the leading signs of the demands of a luxurious age. The great variety in these styles has been originated by the ingenious manufacturer who specializes in such matters and has looked far into the future, and far abroad, as well, in order to meet the increasing demands of an age of many tastes.

The salesman who undertakes the sale of the infants' and the babies' shoe has a remarkable array of goods to set before his public — a dainty kind of footwear that is not equalled in any other department of shoe manufacturing.

As to the first shoes, or the "moccasin boot" it would seem that there is no limit to the kinds that are made, year after year. It is always a delight to the eye, while it is made to be the most comfortable shoe that can be placed upon a baby's foot. Only the most skilful hands are given work upon such shoes. The hand embroideries

## THE BUILDING OF A SHOE

are both delicate and dainty in the little shoe called the "perforated vamp" that has two ties and is made in all colors, with shirrings and gay ribbons. They are works of art, and beautiful, yet practical bits of foot-covering. A similar shoe, though made with but one tie, is the hand-embroidered "Pittsburg." While very many of such shoes are hand-embroidered and indeed much of the work upon which is done by hand, yet the machine is often brought into requisition, such as may be seen in the "Kaufmann moccasin" a machine-embroidered and machine-shirred shoe with a pretty tie. Then, too, there is the "King moccasin," that is slit in the quarter by the cutter, and ribbons conforming with the color of the shoe run through. Another is a "ring moccasin" that looks unique with its button-hole embroideries and crocheted rings; it also has an attractive tie, as is the case with about all the moccasins that are made for infants. A hand-made moccasin is buttonhole stitched and hand-embroidered, and has wash ribbon ties. And so one might continue ad infinitum to enumerate and in part describe certain of the varieties of the first shoes that are placed upon the feet of tiny babies.

The next in order for the growing baby comes a little boot that is made in all the plain colors; also a foxed button boot that is manufactured in kids and velvets and fancy cloths. One very attractive little carriage boot is lined with satin and is brightened up with satin ties. A sporty-looking buttonhole-embroidered boot is made of kid, colored either white, pink or blue. A calf polish shoe is all embroidered and in all colors.

## BABIES' SHOES

The "first-step" shoe that has been mentioned is made for the great occasion of one's "stepping out for oneself" in the world. Generally, these are in tan kids, white or black, and in all kinds of calf goods. Extremes, too, in this special line, are the warm looking white canvas button boot, the dapper little ankle ties of patent leather, and the button boots with cloth tops and foxing. Also made for babies' wear is the "Nu-buck" style, popular for adult wear; canvas ankle ties with box-bow, patent leather ankle ties with butterfly bow, and others too numerous to mention.

## XXVI

### THE COMFORT SHOE

J. W. H.

---

THE appellation "comfort" as applied to the easiest shoe that is manufactured, defines itself. The design of this product is to render the human foot comfortable and at ease, in every possible respect. Other shoes may be made for elegance or showiness, or for rough or dainty wear, for style or special occasions and seasons. The comfort shoe, while it conforms to the necessary requirements of good looks and excellence of material and manufacture, is made with the purpose of providing a special line of footwear that secures absolute comfort.

Many shoes of this class are hand-made. Originally, they were put together on the historic bench in the shoe makers' "ten-footer" shops, and from that time to the present they have held their place and standing in the high estimation of the wearers of easy shoes. In a measure, the Goodyear machine is taking the place of the old hand-workman; but the sort of shoe that it was and is, is a prominent feature and factor in the history of shoe-making.

Formerly this kind of foot-covering was made as the buskin (congress and lace), and the lace and congress shoe being manufactured from serge with a duck lining. The

## THE COMFORT SHOE

buskins were ornamented with a small bow, and with a goring in front. The "lappet" shoe was yet another but never a very popular shoe in the comfort line. It was once the custom that such shoes were made during the season, and they were piled up, awaiting the arrival of buyers from the south and west who were to purchase them for the semi-annual wants of the trade.

The upper fitting of the comfort shoe was usually made in the homes of those who resided near the shops. Later, they were sent to country towns near at hand as well as into New Hampshire for the purpose of soling or bottoming the shoe. When they were returned to the factories, they were heeled and finished and were then made ready for their paper boxes. The latter then held twelve pairs of assorted sizes, sixty pairs in a case. But to-day, the merchandising of these shoes is done by means of individual cartons and packed with thirty-six pairs in each case.

There is a pleasing variety in the comfort shoe as manufactured by individual firms, which makes it very attractive to the buyer, and places it in a leading class by itself, insuring a livelihood to many employees in this State and Maine. Among the styles that first made the comfort shoe popular, were the balmorals, the juliets, and the princesses,—a low style of attractive design. The material in use now as then, is principally the glazed Don-gola kid, though for a long time buskins were made in glove calf, which later was changed to kid, the material now used in all comfort lines of goods. As a rule, this shoe was made almost entirely on a straight last; within

## THE BUILDING OF A SHOE

a few years, the better and more stylish grades have been manufactured with right and left lasts, though they still retain the flexibility and comfort of the old lines.

The comfort shoe in its construction approaches nearer to the actual shape of the foot than any style that is made. Its low heels ensure ease to the wearer. The linings are of sheep and duck, and the counters are always soft and flexible. With the exception of the heel, there are no nails in this shoe, which is sewed with the best linen thread. A few high-priced ones are made in button style. The comfort shoe is made entirely for women, either for house or street wear.

## XXVII

### RUBBER SHOEMAKING.

JOSEPH S. CAPEN.

---

THE rubber overshoe and the rubber boot for inclement weather are among the foremost accessions to modern footwear invention.

There is probably no business of equal magnitude about which the public is less acquainted than the making of rubber footwear. One of the reasons for this is doubtless the fact that it takes relatively a much larger investment to start in the business and do it right. Those who started in the business early had extreme advantage in the fact of experience and equipment being acquired when their entire output was already sold to the public, who had to purchase it to protect their health against weather conditions.

To-day, rubber footwear, like leather shoes, must contain real value, for there is ample supply for the trade under average conditions. The "future" is in the scientific handling of the manufactured product and its sale to the wearer, for, in the writer's opinion, the leather footwear trade in this respect is far ahead of the rubber industry.

In the first place, it must be realized that every condition requires the use of leather shoes; and, above all, it is "popular," but not so with rubbers. Invariably the



## THE BUILDING OF A SHOE

question is "Have I got to wear my rubbers?" Consequently, "dry feet" is the only real reason for wearing rubber, for other materials of less cost will furnish the warmth.

Making rubbers is to be compared more to the art of cookery, and if everybody had to have them every day, sick or well, the industry would have been developed to a more scientific completion. The cook may be able to assemble good materials to a greater or lesser degree of system, but what a difference in the result!

This fact can be illustrated by comparison of what constitutes a meal in a lumber camp and the meal that can be made with scientific methods and appliances in a modern kitchen of a hotel, and still not increase the grade, or cost, of raw material, but to use it *all* by the "know how" system. Until very recently there was no knowledge to be obtained by study about cooking in our scientific schools, it being necessary to get it by experience, plus a great waste of time. The early days of the rubber business and its secrecy are examples of the same reasoning.

The leather boot and shoe industry has a great lead over the rubber trade, in development, which always gives opportunity for greater values to the consumer.

A little handy information as to the material of which "rubbers" are manufactured: Caoutchouc, or, as it is commonly called, India rubber, is the coagulated sap of a tree found in largest quantities in Brazil. Some of the various local names by which the rubber is known, are as follows: fine Para, Liberian, Mozambique, Mozambique

## RUBBER SHOEMAKING

spindles, Borneo, Nicaragua scrap, Guayaquil, African chimbles, etc.

The sap is usually drawn from the trees in the evening, an incision being made in the trunk of the tree, and a cup fastened beneath to catch the sap as it runs out. The next morning, the vessels are emptied and carried into camp or nearby settlement, where the rubber, which now has the appearance of a rich cream, is usually prepared thus: Beneath a clay furnace or chimney a fire is built of some material that emits a dense white smoke. A mould filled with the sap is then held over the smoke, which soon thoroughly hardens the rubber; more of the latter is added from time to time, until the operator has made a lump of the material as large as can be handled. It is then ready for the cleaner and the manufacturer.

Crude rubber comes to the manufacturer in various forms and conditions, some requiring much washing and grinding to bring it into proper condition to be compounded with other materials. It has all to be ground, and next comes the drying, which by the advent of vacuum drying has greatly reduced the time required to do it, which of course affects the cost of making, including interest on money, and enables other economies to standardize costs.

There is still a large amount of crude rubber dried in the drying room, necessitating spare time, heat, etc., but this method still has its believers over the more modern invention.

When washed and dried it is ready for compounding, which is done over rolls heated to various degrees as

## THE BUILDING OF A SHOE

necessity demands. Here is where knowledge plays a very important part in securing, at the least possible cost, a compound suitable to the needs arising from the particular demands of the article.

It is here, also, that the grades are made and the minerals and sometimes vegetable oils are added, including sulphur and other materials commonly known to be necessary for this work.

After leaving the mixing rolls, the rubber is warmed on rollers before being run off the big calender rolls onto linings to make them adhesive (like bicycle tape) or sheeted out on upper calenders and soling calenders to be cut as is leather into vamps and soles.

Being uniform in thickness, the sheets do not require the close scrutiny of the cutter that leather does, but it is much harder to handle, being just like pie crust, and if stretched will not retain its original condition. The cutting is done either by hand or machine, and the scrap may be calendered out again, but care and knowledge are required to do this. This item of cleaning up his own scrap would attract the shoe manufacturer. The linings, when coated, are laid in thicknesses and died out, either by hand or machine. This process furnishes vamp linings, counters, filling soles, etc.

We have now described the parts, which are then assembled in racks which are numbered (each maker having his own), and in the making-room.

The vamps of rubber and the soles are cut and placed between leaves of a cloth book to prevent them sticking together, and these are given to the makers at the same time.

## RUBBER SHOEMAKING

One will realize that making is skilled work, usually paid for by the piece. An average worker makes about thirty-six pairs of rubber shoes, and about one-half as many pairs of arctics or boots. The skill of the maker is shown in action, smoothness and neatness of his work and table.

There are three stages of putting rubber shoes together.

1. Putting vamp linings onto last with inner and filling soles and necessary stays.
2. Putting on the rubber vamp over the lining with rubber-coated surface and rolling with a hand roller.
3. The placing on of the outersole and rolling it down to a perfect surface, free from blisters, for if not properly "stuck" when placed in the vulcanizer, or "heat," the air will cause it to lift and make a still larger blister

After using a wheel stitcher to "dress up" the work, the rubber goes to the varnisher and is either dipped or painted (still on the last) and placed on racks and run into the "heater" or vulcanizer, which "cures" or bakes the shoes. The intensity of heat and length of time the shoes are in the vulcanizer is of vital importance, the difference in time being regulated by the compound used.

This last operation is a matter of hours, there being three "heats" in a period of twenty-four hours. When taken from the oven the shoes are removed from the last and mated and strung if packed loose, but it is not necessary to tie them if packed in individual cartons, which is very common nowadays.

Rubber footwear passes through the rooms in four days, readily, which has its advantages over many lines

## THE BUILDING OF A SHOE

of merchandise. There is no doubt that the different operations will of necessity be continued, but in the future the system and scientific development of them will add so much to this industry that the 7 x 9 shoemaker's shop method and success of our fathers will compare with the present-day rubber shoemaking.

## XXVIII

### FACTORY SANITATION

CHARLES H. BANGS, M.D.

---

**N**OTHING is more demoralizing to a well organized factory than sickness among the employees, and it is as essential for the employer as for the employed that unnecessary or preventable illness be avoided. Since something like fifty per cent. of the ill-health of any community has been proved to be preventable through the enforcement of health regulations, the State has come to require of the employer certain precautions to safeguard the health of his employees.

These requirements are so simple and so reasonable that it seems strange that it should ever have been necessary among intelligent people to enact laws compelling their enforcement, or to provide inspectors to see that they were enforced.

The essential requirements of factory sanitation are good air, pure water, good light, cleanliness, and proper toilet facilities. Others specified in the Massachusetts Statutes are mainly to amplify and make sure the enforcement of these fundamental matters.

The thing most vital to life itself is air. The respiratory function goes on regularly from birth to death. From sixteen to eighteen times a minute, in the adult, the lungs are filled with air, a part of its oxygen extracted and then

## THE BUILDING OF A SHOE

it is exhaled with the addition of carbonic acid, moisture and such germs of disease as have been taken up in the respiratory tract. Any material interference with the quantity or quality of the inspired air leads to a material impairment of the health. Any pollution of the air by disease germs, dust or irritating or poisonous vapors leads to sickness that could be, to a great extent, avoided by proper care of the air supply.

Some occupations are so hazardous from the nature of the dust and fumes inhaled that a very few years is the average life of those employed therein. The workmen in dusty trades have also been found to be particularly susceptible to tuberculosis and pneumonia. Fortunately, the different branches of the shoe industry are comparatively free from the graver forms of air pollution, and such as do exist can be quite effectually removed by proper ventilation and the use of blowers. Such ventilation is provided for by Acts of 1909, Chapter 514, which supplements Chapter 325 of the acts of 1908.

Pure water is essential to health, and many germs of disease are carried through the medium of an impure water supply. In accordance with Section 78, Chapter 514, Acts of 1909, "All manufacturing establishments within this commonwealth shall provide fresh and pure drinking water to which their employees shall have access during working hours." Having provided pure drinking water, it should still be borne in mind that such water may be rendered impure and a source of danger if it be kept in unclean tanks, or if impure ice be used in it, or if exposed to dust or other pollution; also that the common

## FACTORY SANITATION

drinking cup is a source of grave danger in the spread of disease.

The discovery in comparatively recent years that disease was communicated in most cases by well defined germs that may be found by careful scientific investigation has made it possible to trace in a definite way the route by which disease is liable to spread. It has been demonstrated that the saliva and the breath convey the germs of a great many diseases and that articles passed from the lips of one to those of another without cleansing are potent factors in the spread of disease. An examination of a hundred glass slides touched by the lips of different individuals showed the number of germs deposited on each to vary from a few hundred to more than a hundred thousand. The article most commonly passed from lip to lip is the common drinking cup. Prof. Davidson states that from a small space on the brim of a cup used nine days in a school, over one thousand germs were obtained, and from this the estimate has been made that upon the surface of the cup likely to be touched by the lips in drinking, there were no less than 5,000,000 germs, to say nothing of those that lurked lower in the cup.

It is a well established fact that tuberculosis is not infrequently communicated to innocent persons by drinking from cups. Diphtheria and syphilis can undoubtedly be "caught" in that way, while tonsilitis, ulcerative sore throat, mumps, whooping cough, influenza or la grippe, measles and probably pneumonia are communicated in ways that readily associate themselves with the indiscriminate use of the drinking cup.



## THE BUILDING OF A SHOE

So great is the danger from this source that a number of states, through legislative enactments or Board of Health regulations, have abolished the common drinking cup on railroad trains and in public places.

Good light is a State requirement in factories, for two reasons. First, disease lurks in dark places, second, poor light causes an unnecessary strain on the eyes which leads to impairment of vision and a consequent decrease of efficiency. While good light is required by Massachusetts laws, yet the shoe factories of to-day are constructed with especial reference to good light quite as much to add to the efficiency of the force as to meet the requirement of the law. It is a good business proposition to have plenty of light, as it increases the efficiency of the force and cuts down the cost of artificial lighting.

By Acts of 1911, Chapter 603, the State provides for investigating "the eye and vision in their relation to diseases of occupation, including injuries to the eyes of employees, and to the pathological effects which are produced or promoted by the circumstances under which the various occupations are carried on."

Cleanliness is a reasonable requirement in factories, and one that should need none of the existing laws for its enforcement. As a health measure it is necessary, for disease germs breed and develop in unclean places. Good factory management recognizes cleanliness as a part of a successful business proposition, and frequent sweeping and the prompt gathering up of litter and waste has been found an economy rather than an expense. Dirty factories drive away good help. Clean factories attract the best skill.

## FACTORY SANITATION

Proper toilet facilities are a reasonable requirement in connection with any factory, not only from the standpoint of public health, but from public decency as well. The law requires proper water closets in factories where five or more persons are employed, or in which two or more children or women are employed. "Wherever two or more males and two or more females are employed, separate water closets, earth closets or privies shall be provided for the use of each sex." It is further required that these toilets shall be kept clean and free from effluvia arising from any drain, privy or nuisance, and no person shall be allowed to use a closet or privy which is provided for persons of the other sex.

In this connection a word of warning should be given relative to the use of the roller towel found in factory wash-rooms.

The dirty towel is a direct menace to the public health. Dr. S. J. Crumbie, Secretary of the Kansas State Board of Health, has recently, in his usual vigorous manner, directed the attention of the public to the danger that lurks in the towels hung in the lavatories of hotels, restaurants and other public places for the use in common of all comers.

Roller towels taken from such places and submitted to laboratory examinations and tests have been found to contain the germs of many infectious diseases. Just a moment's reflection will show how possible it is for infectious germs to be deposited upon a towel in the ordinary course of its use, and how readily they may be transferred to some subsequent user. Among the diseases liable to

## THE BUILDING OF A SHOE

be communicated in this way are typhoid fever, scarlet fever, diphtheria, syphilis, gonorrheal infections of the eyes, barbers' itch and other maladies too numerous to mention. Undoubtedly many cases of contagious disease of unknown origin have been contracted from this source. Investigation has shown that it is not uncommon to find only one to three towels per week allowed in schools of forty to fifty pupils. This is deplorable. The better class of hotels, clubs and other public places discarded the use of the roller towel many years ago and substituted for it the individual towel, but in many theatres, restaurants, saloons and manufacturing places the old custom still prevails. In a great number of offices and factories a large percentage of the employees keep individual towels in their lockers for their own use. This is a wise precaution.

The results of the legislation bearing upon factory sanitation have been productive of much good, not only from the health standpoint, but from the economic standpoint as well.

Good air has been found to be a stimulant to better effort on the part of the workman, and the removal by blowers of the dust from the buffing machines not only removes a menace to the health of the employees, but it prevents the soiling of delicate goods in process of manufacture and thus obviates an annoying loss. The use of vacuum cleaners prevents the stirring up of settled dust and thus lessens the danger of air pollution from that source. Pure water is a public necessity. Good light enables the workman to do more and better work without unnecessary tax upon the sight. Cleanliness has been

## FACTORY SANITATION

found to be profitable, not only in the utilization of waste, but from the fact that the better class of labor will leave the dirty shop to obtain employment in the clean factory. Toilet requirements are so reasonable that their benefits need not be discussed.

While it has been impossible to correct every sanitary abuse in factories, and particularly has this been true regarding the "spitting nuisance," yet in the main the benefit of the enforcement of these laws has been so beneficial and satisfactory to both the employer and the employed, that neither would wish to go back to old conditions.

## XXIX

### RECREATION OF OPERATIVES

WILLIAM B. HENRY

---

**W**HAT is it that goes into the best shoe that is made, besides the materials and the knowledge of how to assemble them? Intelligence, and a clear-headed skill, and even a love of the work for its own sake, and there is not a skillful workman in any industry but will testify to the pride he takes in turning out the best work of which he is capable. To have attained the plane of possessing that just and proper pride in one's work, is to have mastered the problem of fashioning one's own part of the shoe, step by step.

The philosophy of the shoe manufacturer carries with it all the essential principles of earnest study, of close application, and of workmanlike execution; and it does not forget that quite as important feature of superior training in shoemaking — the recreation of the operative. The value, the dignity of this feature, goes hand in hand with all the other requirements of skilled workmanship — thus proclaims the practical business man of to-day more persistently than ever before in history. He knows and the operatives know what a leading part recreation plays in the construction of the shoe, in order that all may work together satisfactorily, both physically and mentally, in “making good,” and in making good shoes.

## THE RECREATION OF OPERATIVES

In the old days, the apprentice was left to look out for himself in the matter of finding diversion and rest — but he must be sure to fulfill the obligations of the workman at his toil. Who cared about his play so long as his day's work was done? What — a great company controlling a great industry, interest itself in making good cheer and diversion, rest and recreation for the employee a part of the power that made the wheels of the factory's machinery go? No, that innovation was a long way ahead.

But we are realizing that very thing to-day, and appreciating fully the advantages that both employer and employee share in the generous treatment of the operative by the concerns for whose business success the best of his effort is given. It had to come; and best of all, it was brought to pass not by any coercion or irregular demand, but as a wise and careful provision of "the firm" itself, to meet its employees halfway, and to thus actually welcome the operative as a sharer in its plans for better, brighter, busier workmanship.

Already a large number of shoe manufacturing concerns are leading the way in specializing in the recreation of the operative; that is, in founding within their own domains, institutions stamped with their largess and goodwill. And the appreciation of the employees of these establishments is unbounded. And it is evident, too, that the results in the factory are fruitful in the construction of the shoe.

The example set by one concern, and soon followed by another and yet another, is indicative of a very broad and

## THE BUILDING OF A SHOE

helpful spirit in the business world, that will not cease until the heaven has been everywhere spread. It means something far more than the mere amelioration of the condition of the operative when a shoe manufacturing company purchases a fine old homestead with handsome gardens, and continuing its new burden of expense, welcomes its employees there as to their own home, for purposes of rest and recreation—for receptions and entertainments, and merry occasions, generally. It is much like good comradeship, a working together in unison, when a firm of manufacturers undertakes the building of a structure that shall house its employees for their social meetings, and for their pleasant club and society affairs, and bear the expense of such a welcome innovation. An interesting thing to observe is the business-like way in which these matters have been brought about — no advertising for undue notoriety in any case, no calling out from the house-tops “See what we have done”; it is all just a purely business procedure, a new department added on to many others, but that puts the concern in the front rank of progress.

Aside from these specializing features, there are scores of other methods of recreation and sociability in which the shoe manufacturer has become a leader and director, such as the annual picnics, outings, and excursions, planned and arranged for under the auspices of the firm. Not to forget the bowling leagues that are maintained in the different parts of the shops; nor the annual banquets of the superintendents and foremen, to which the members of the firms are invited.

## THE RECREATION OF OPERATIVES

These humanizing means bring employees and employed into closer touch, and fail not of the wholesome end in view, that of making the contented shoe manufacturing establishment in its entirety. How necessary to the well being of all are such affairs. Years ago the crew of workmen in the little shops went and came about as they pleased, concerned only in getting the work done at the time agreed upon, and then finding for themselves whatever diversions existed. To-day, vast systems of labor keep the operatives undeviatingly at their machines, and the same system and rule makes provision for their recreation. With the more widespread adoption of such a bountiful provision, which some firms have so well established, we may well look forward to increasingly superior conditions in the shoe manufactory, where the skilled operative is at work building the shoe.



### XXX

## FINDING THE COST

J. JOHN HOOPER

---

**I**T may be unnecessary to remark that among the first things to make thorough preparation for in the manufacture of shoes is that of finding the cost of "building the shoe."

To the man who is thoroughly informed and practised in all the branches of modern shoemaking, this is not a difficult task; but it may well be stated, keeping within the bounds of veracity, that many men who have started in the shoe-manufacturing business have not so informed themselves.

To become expert in some branches is well and good; but as one goes on it becomes evident that many vital subjects must be attended to that have been given but little attention. Numerous failures have been caused, not through one's inability to figure, but through carelessness in figuring the cost of making a shoe.

To the new man in the business, then, the following directions may not be amiss. The first thing to do, it would appear, is to come to a settled determination as to the class of shoes one is to produce. This is the most essential point. The writer does not believe it is practical to make a shoe, and to set a price upon it afterwards.

## FINDING THE COST

This method might be in vogue in some specialty shoe factories, but it is not deemed practical by the average shoe manufacturer.

If one is to figure for the retail trade, he will discover that there is a fixed range in prices, and that generally the manufacturer must meet these prices.

Perhaps in a more decided way, the same is true in the jobbing trade. The shoe is built to meet the popular prices.

As shoes are usually sold in twelve-pair lots, or their multiple, it seems feasible to figure in twelve-pair cases. One way that has proven successful is to figure stock and findings in one column, and labor in another. To omit the smallest item is apt to prove disastrous; let nothing be taken for granted, but, so far as possible, let the figuring be done from the standpoint of actual prices. As a matter of course, fluctuations in stock, sometimes in labor, prevail, but it is always best to figure upon the safe side.

Upon the completion of both these columns, one must look after the royalties; generally, these are fixed, and become easy to determine.

Necessarily, lasts and patterns must be figured in the shoe. These differ a great deal as to the range of style adopted, especially if the styles become freakish. So one must seriously consider the style of shoe he intends to manufacture, in order to charge in due proportion to the life of the last.

A leading item to determine is the discount one is to make, and to render it staple. The salesman's com-

## THE BUILDING OF A SHOE

missions must also be figured in the shoe — the regular commissions are  $2\frac{1}{2}$  per cent. for the jobbing trade, and five per cent. for the retail trade.

Yet one more item that has been left until the last, as it is one of the most important to take into consideration. This includes the manufacturing expenses, or "overhead charges." All manufacturers differ a great deal as to which is the proper way to figure such expenses. To him who is already in the business and well established, this becomes a much easier proposition to solve than it is to the new man, because he knows practically what the volume of business for the next season will amount to. It is a hard question for the new man. If he is to make but a comparatively few pairs of shoes, though his plant be large or even medium sized, he is unable to figure these expenses, for the reason that his manufacturing, plus his labor and material expenses, make the price of of his shoes so high that he would be unable to compete.

So he must establish some basis upon which to figure. For example, if he has a plant that is capable of producing 3,000 pairs a day, it would not be wise for him to figure his expenses from that basis, for his plant would not be running full time the year around. Then again, it would not be wise for him to figure on too small a volume because, as has been stated, he would be out of the running with his competitors. Doubtless, the safe way for an established business is to figure as near as possible the volume of the business for the year. It is better to be on the safe side, and figure smaller.

## FINDING THE COST

If one takes all his overhead charges, such as rent, heat light, office salaries, firm's salaries, and all non-producers', insurance (together with samples on which there is necessarily a loss), and a thousand and one other things which the manufacturer must have, and then add about one-fourth more, he will perhaps make a very accurate estimation.

Now, then, if one's expenses foot up \$10,000, and he is reasonably sure of producing \$20,000 worth of business, then he can figure five per cent. manufacturing expenses, from the fact that his manufacturing expenses are about the same in that plant. If his volume falls to \$10,000 then his manufacturing expenses must figure ten per cent.

It is apparent that along this line many shipwrecks in the shoe business have occurred. As an example, though the shoe shows five per cent. a pair profit (figuring upon a basis of five per cent.), when the manufacturing expenses advance from five to ten per cent., the profit is wiped out, and one is likely to awaken to the fact that his shoe manufacturing has not brought the expected returns.

It may be interesting for the reader to know that in figuring the cost of a shoe there are many items to be considered. From the cost sheet of one of the leading manufacturers will be found the following:— Description, Vamp and Fox, Tip, Pattern, Facing, Lining, Back Stay, Eyelet, Tongue, Last, Sole, Counter, Heel, and Finish. From this description of the shoe to be figured appear the various items of cost, and in this particular factory they are as follows:—

## THE BUILDING OF A SHOE

- A. Upper Stock.*— Top, Vamp and Foxing, Tip, Total.
- B. Lining Stock* — Quarter Lining, Top Facing, Side Stay or Fly, Vamp Lining, Button Stay, Toe Piece, Bottom Lining, Total.
- C. Bottom Stock.*— Outsole, Insole, Counter, Welt, Heel and Tap, Box Toe, Tap, Total.
- D. Findings and Cases.*— Case, Carton, Ribbon or Lace, Stitching Room Findings, Making Room Findings, Packing Room Findings, Total.
- E. Cutting Room.*— Quarters, Vamp and Foxing, Tips, Linings, Top Facing, Button Fly or Stay, Quarter Lining, Vamp Lining, Bottom Lining, Stamping, Total.
- F. Stitching Room.*— Skiving Vamps, Skiving Top and Front, Skiving Tips, Skiving Back Stay, Skiving Foxings, Pressing Vamps, Pressing Top and Front, Pressing Tip, Pressing Back Stay, Pressing Foxing, Closing Linings, Staying Linings, Stitch Top Facing, Stitch Side Stay Fly, Barring Fly, Sewing Labels, Closing Outsides, Closing Foxings, Ironing Silk Top, Ironing Cloth Seams, Rubbing Quarters, Rubbing Vamp and Foxing, Staying Heels, Staying Fronts, Staying Foxings, Stitch Back Stay, Stitch Foxing, Stitch Side Stay, Stitch Toe Plugs, Stitch Tongue Blucher, Lining Tongue, Binding Tongue, Gumming Vamp Lining, Marking Vamps, Stitching Tips, Gumming Button Fly, Closing On, Turning, Top Stitching, Binding Vamp, Trim and Black, Eyelet, Mark for Button Holes,

## FINDING THE COST

Working Button Holes, Finish Button Holes, Perforating Vamp, Perforating Tips, Perforating Foxings, Vamping, Closing Toes, Marking for Buttons, Sew on Buttons, Button Up or Lace, Inspecting, Covering Top, Total.

G. *Stock Room*.—Round Insole, Fitting Lip Channel, Fitting Gem Insole, Fitting Outsole, Total.

H. *Making Room*.—Pick out Lasts, Pull Over, Operating, Trim after Laster, Welting, Trim Inseam, Skive and Beat Welt, Tack Shank, Filling, Cement and Lay Soles, Tack Heels, Rough Rounding, Opening Channel Stitching, First Wheeling, Beat Out, Pull Last, Nail Seat, Round Heel Seat, Nailing, Slugging, Relasting, Shaving, Breasting, Breast Scouring, First Scouring, Edge Trimming, Edge Setting, Second Wheeling, Second Scouring, Heel Finishing, Buffing and Clean, Hard Finish, Black and Roll, Cut and Wheel, Cleaning, Pull Off, Total.

I. *Packing Room*.—Stamping Sole, Stamping Top Facing, Lining, Lacing, Ironing, Dressing, Tip Fixing, Packing, Total.

J. *Factory Cost*.—Commission per cent., Discount per cent., Lasts, Manufacturing Expense, Total Cost.

*Summary* — A — Upper Stock, B — Lining Stock, C—Bottom Stock, D—Findings and Cases, E—Cutting Room, F—Stitching Room, G—Stock Room, H—Making Room, I—Packing Room, J—Factory Costs, Total.

These several items of cost under the letters are totaled. The various totals are carried to the summary which

## THE BUILDING OF A SHOE

appears at the bottom of the sheet, and when the footing is made, it gives the cost of the completed shoe, which includes factory costs, as will be seen above, as well as commission, discount, lasts, and manufacturing expense.

Doubtless, to the reader who has never considered how many parts go to make up a shoe, this bit of information may be of interest.

# BOOKS

---

## **Astronomical Journal.**

Devoted exclusively to Astronomical Science. Edited by Prof. Lewis Boss. Price, \$5.00 per volume of twenty-four numbers.

## **The Theory and Practice of Interpolation.**

By HERBERT L. RICE, M.S.

This volume (small quarto), containing two hundred and forty-four pages, should find a place in every technical or scientific library, and upon the desk of every computer, working astronomer, or student of physical science. The work has a theoretical as well as a practical value.

The treatise abounds with interesting examples and practical applications, all of which have been selected with great care; while a number of special examples and problems may be found at the close of each chapter.

The typography of the work merits especial attention for its clearness and general excellence. A generous margin further improves the attractiveness of the page. Price, full cloth, \$3.50. Postage prepaid, \$3.75.

## **Researches on the Evolution of the Stellar Systems. Vol. I.**

By T. J. J. SEE, A.M., Ph.D.

This work is the first volume of an extensive investigation which Dr. See has undertaken on the evolution of our stellar systems. The introduction begins with a sketch of the nebular hypothesis of our solar system. In Chapter I, the author gives the common proof of the Newtonian

---

**THOS. P. NICHOLS & SON COMPANY  
PUBLISHERS . . . . . LYNN, MASSACHUSETTS**



## BOOKS

law of force for our solar system, and then proceeds to consider the proof for the orbits of binary stars. Chapter II contains the orbits of forty binary stars deduced from the best observations. Chapter III presents a discussion of the results. Price, full cloth, \$5.00. Postage prepaid, \$5.35.

### **Researches on the Evolution of the Stellar Systems. Vol. II.**

By T. J. J. SEE, A.M., Ph.D.

This splendid work is indispensable to the astronomer, mathematician, physicist and geologist; it will prove of decided interest also to the chemist, biologist, engineer, and in fact to every progressive student, thinker, investigator, library, college, university, observatory, society, or other institution of science or education.

In this magnificent work, illustrated throughout by views and photographs of the highest beauty, Prof. See deals with the conclusions he has arrived at as to the origin of our own and other systems generally from his researches during the last twenty years; and gives in a connected form the matter of numerous papers contributed by him to the *Astronomische Nachrichten*, *Popular Astronomy*, and other magazines.

Bound full cloth, 736 pp. with about 250 illustrations, including many plates of wonderful photographs of the heavens. Price, \$10.00 per copy, express prepaid.

---

**THOS. P. NICHOLS & SON COMPANY**  
**PUBLISHERS . . . . LYNN, MASSACHUSETTS**

# BOOKS

---

## **The Family of Zaccheus Gould of Topsfield.**

By Dr. B. A. GOULD.

This volume of over 350 pages contains all that can be learned of the ancestry of Zaccheus Gould, who came to New England, about 1638, and of his descendants of the name, to the eighth generation, inclusive, thus comprising thirteen generations in all. Full Indexes are given.

The edition is limited, and when exhausted will not be reprinted, as the work was not plated. Price, full cloth, by express or mail, prepaid, \$5.00.

## **Bronsdon and Box Families.**

Combines several family histories and much that is interesting concerning influential persons in Colonial Boston. 300 pp. illustrated. Published 1903. Price, full cloth, \$4.00.

## **Patriotic Selections for Memorial Day.**

Compiled by Miss Harriet L. Matthews and Miss Elizabeth E. Rule of the Lynn Public Library. Price, School edition, 50 cents.

## **Hearths and Homes of Old Lynn, with Studies in Local History.**

By Hon. NATHAN M. HAWKES.

This book is an ingathering of sketches, addresses, and local historic studies, most of which have been printed in some form, from time to time, of late years. 350 pp. Fully illustrated.

Limited numbered edition, full cloth. Price, \$3.00

Limited numbered edition de luxe, full cloth. Price, \$7.50

---

**THOS. P. NICHOLS & SON COMPANY**  
**PUBLISHERS . . . . . LYNN, MASSACHUSETTS**



THOS. P. NICHOLS & SON CO.

*... Printing of All Kinds ...*

---

Particular attention paid to the requirements  
of the Shoe Trade.

BLANK BOOKS

LOOSE LEAF AND  
CARD INDEX FORMS

OFFICE STATIONERY  
AND BLANKS

MANIFOLD FACTORY FORMS

*ILLUSTRATED SHOE CATALOGUES*

In the Highest Style of the Art

Distance in location is no obstacle in buying  
from us.

---

113 MARKET STREET, LYNN, MASS.

# TO THE SHOE RETAILER

Why not have your shoe cartons marked uniformly with *your own* labels? We can furnish you original designs, and supply the shoe manufacturers from whom you order from time to time. Let us submit a sketch of a special design. The sketch will cost you nothing if not satisfactory, provided you return it to us. Write to-day.

THOS. P. NICHOLS & SON CO.

Printers and Publishers, Lynn, Massachusetts

---

## PERFECT EXPRESS RECEIVING BOOK

*ADAPTED TO THE USE OF EVERY  
OFFICE, FACTORY OR STORE.*

Have you any permanent record of all merchandise received?

The use of this book will eliminate all chance of costly mistakes that result in confusion, delay and loss of profits.

It facilitates the locating of losses and the proving of claims.

---

CAPACITY, 1000 ITEMS. \$1.00 BY MAIL

---

THOS. P. NICHOLS & SON CO.

Printers and Publishers Lynn, Massachusetts

# TRADE JOURNALS ON SHOEMAKING

---

*For the Shoe Manufacturing Trade:*

## **Superintendent and Foreman**

---

Published weekly at \$2.00 a year,  
is the first and foremost in circulation,  
technical matter and news  
of the trade.

---

*For the Shoe Repairing Trade:*

## **The Shoe Repairer and Dealer**

---

Published monthly at \$1.00 a year,  
is the only paper devoted exclusively  
to shoe repairing and custom  
shoemaking.

---

FREE SAMPLE COPIES UPON REQUEST

---

**SUPERINTENDENT AND FOREMAN CO.**

EDWIN W. INGALLS, Pres't.      WILLIAM E. GILL, Manager.

127 FEDERAL STREET,      BOSTON, MASS.

en

7













